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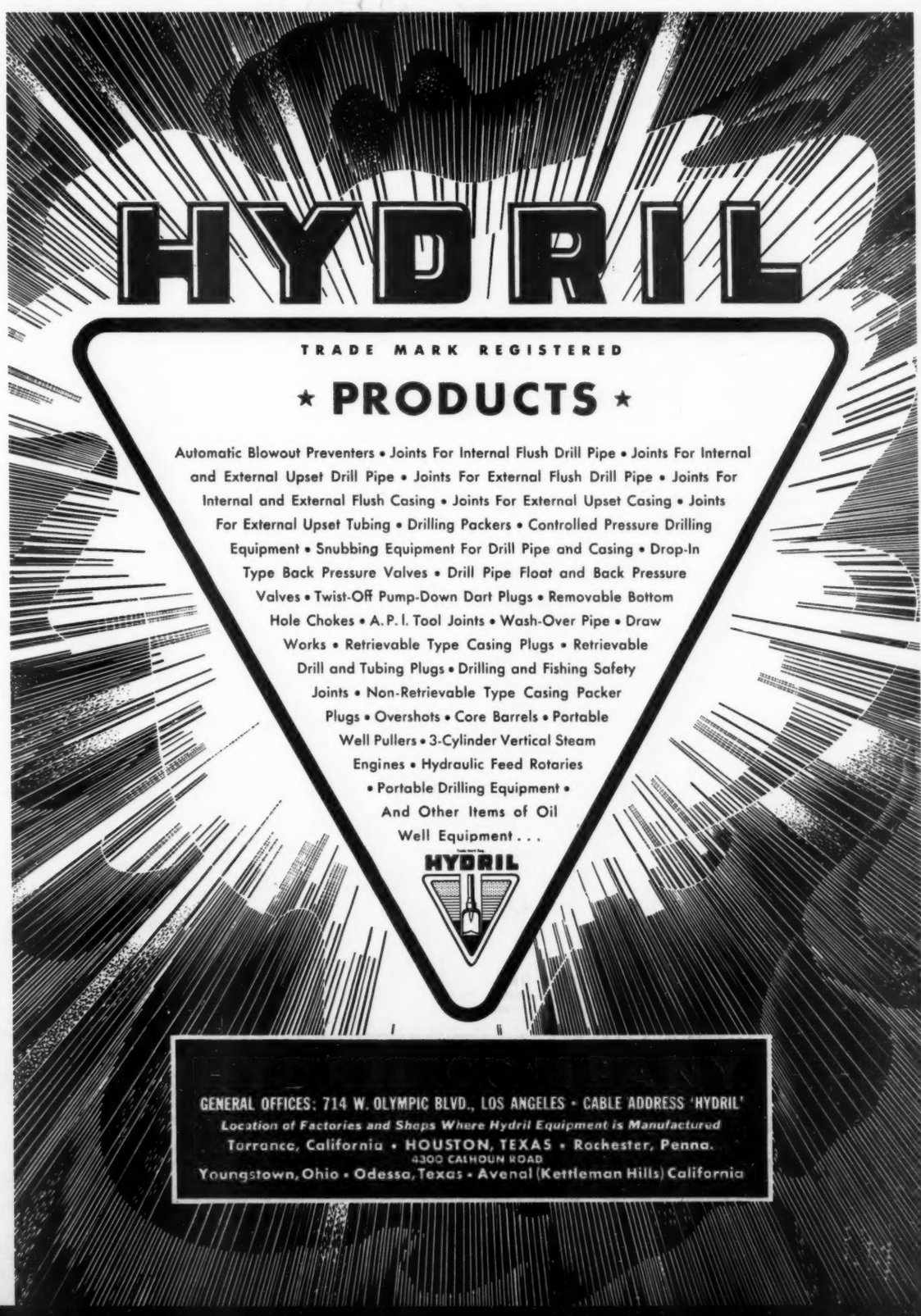
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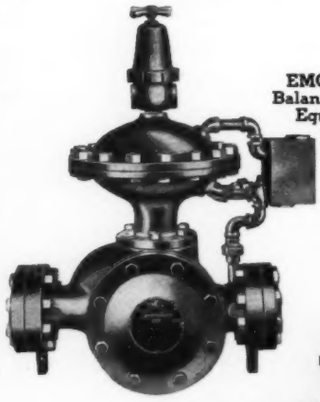

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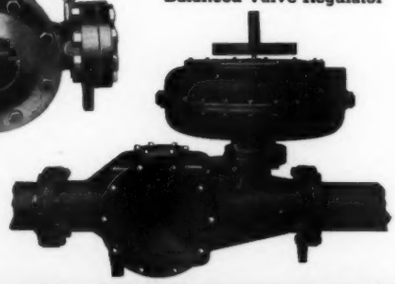

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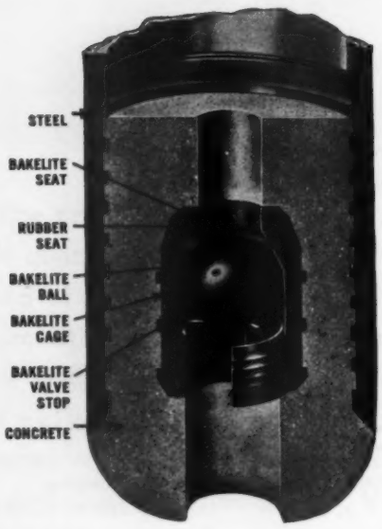
TO GO DRIVING WITHOUT GOOD BRAKES IS ALL RIGHT . . . Until you want to STOP!



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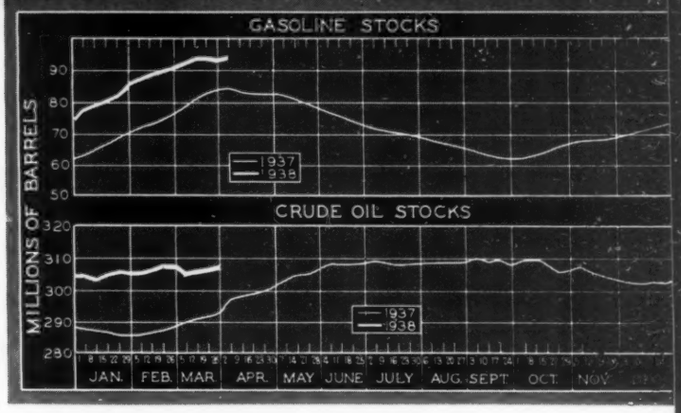


Prices For Fuels Lower in East

MARKETWISE the most important development of the week was another reduction of 10 cents in Bunker C fuel oil along the Atlantic Seaboard, the new price being $1.05 per barrel. At Gulf Coast shipping points the reduction was 5 cents per barrel resulting in a general price level of 80 cents per barrel.

CRUDE PRODUCTION *3,365,609 barrels daily average—down 40,010 barrels.*

CRUDE STOCKS *307,557,000 barrels as of March 26—up 1,177,000 barrels.*

GASOLINE STOCKS *92,924,000 barrels as of April 2—up 66,000 barrels.*

REFINERY RUNS *3,145,000 barrels daily week ending April 2—up 65,000 barrels.*

These reductions reflect the weakness in those fractions of crude oil sold as fuel oil. This situation has brought declines of 25 to 30 cents per barrel from the highs of last year, applying to practically all refining centers except California. The West Coast market the latter part of 1937 and the first two months of this year was stronger than the eastern market. Recently it also has shown signs of weakness, with reductions in quotations.

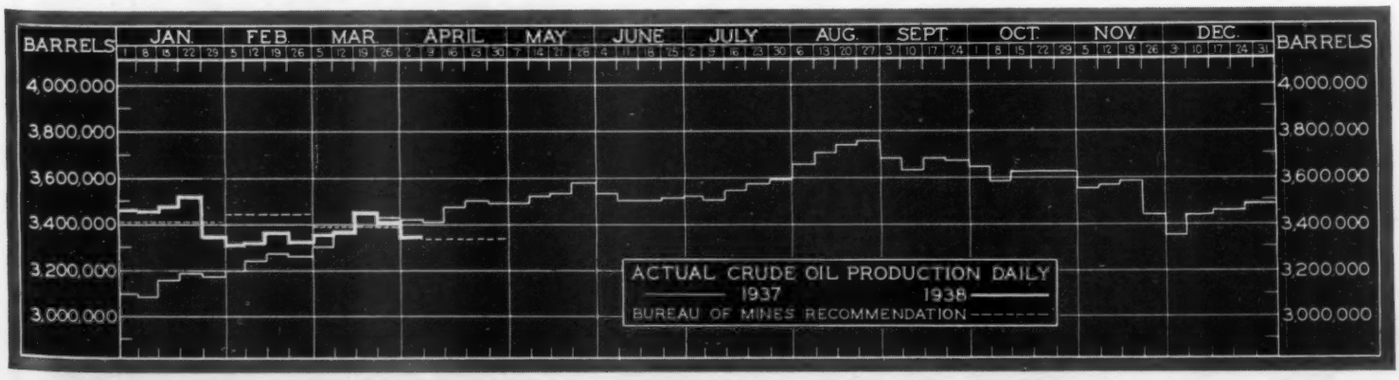
While realizing the direct connection between fuel oil and general markets in the oil industry, particularly in the case of low-gravity crudes, market students are not alarmed by the latest cut in prices. It is contended that due to the threatened shortage last year, prices on residual fuels advanced too much in relation to other products and a decline to more normal levels was to be expected with a lessened demand, which will be stimulated by the lower quotations. It is pointed out that the present price of $1.05 for Bunker C fuel was the average price for 1936.

With a substantial decline last week, natural crude oil output appears headed for still lower levels during April. Failure of the Oklahoma Corporation Commission to authorize a lower production for April resulted in one major buyer prorating its purchases to 80 per cent, starting April 10. In Kansas two large buyers who were taking 85 per cent of the allowable production in prorated fields will take 75 per cent during April. Another company has announced an 85 per cent schedule of purchases applying to all fields in Kansas. A more severe curtailment is to be made effective in the harbor area of California, while in Texas state officials are considering the necessity of continuing the Sunday shutdowns through May. The need for this curtailment is apparent from the Bureau of Mines reports which show that crude stocks for the three weeks ending March 26 accumulated at the rate of 142,000 barrels daily. These accumulations reflect reduced runs to stills of refiners in recent weeks. The reductions have placed refinery operations on a healthier basis with a start made in the liquidation of record gasoline stocks. The gasoline market outside of California was reported steady to strong the first of the week.

Daily Average Production for Week

	April 2 1938	Bur. Mines Apr. est.	Apr. state allowables	Mar. 26 1938
Oklahoma City	102,700	.....	.....	109,450
Fitts	59,725	.....	.....	60,750
Remainder of state	329,450	.....	.....	334,625
Total Oklahoma	491,875	526,500	475,000	504,825
East Texas	429,700	.....	.....	429,165
West Texas	191,950	.....	.....	188,947
North Central Texas	101,549	.....	.....	99,739
Texas Panhandle	66,648	.....	.....	72,271
East Central Texas	98,947	.....	.....	99,295
Gulf Coast Texas	325,800	.....	.....	322,320
Southwest Texas	106,298	.....	.....	105,686
Total Texas	1,320,892	1,329,800	1,308,959	1,317,423
North Louisiana	80,265	.....	.....	77,120
Gulf Coast Louisiana	182,200	.....	.....	183,580
Total Louisiana	262,465	239,800	252,275	260,700
California	702,750	698,700	698,700	727,500
Kansas	166,375	173,000	173,000	178,750
Arkansas	54,400	40,000	.....	52,020
Eastern fields	140,850	132,600	.....	140,700
Michigan	52,832	51,400	.....	52,141
New Mexico	105,110	106,000	105,100	105,930
Rocky Mountain area	68,060	63,900	.....	66,530
Total United States	3,365,609	3,361,700	.....	3,405,619

Decrease 40,010 bbls. daily.



Record in Tourist Demand for Gasoline Predicted

By H. STANLEY NORMAN

NEW YORK, Apr. 5.—American automobile tourists are expected to set new records in motor fuel and motor oil consumption this summer. Oil companies, sensing the potential market, are now far advanced on campaigns to make travel by automobile more attractive and convenient than ever.

There will be a greater number of automobiles in service and there are more surfaced highways upon which to travel. There will be more time available for driving due to the spread of vacation grants among the employed. Troubled conditions existing in Europe are likely to influence hundreds of transatlantic travelers to stay in this country for the summer, holding out a possibility that the northern routes to resorts of moderate temperature will be traveled to a record-breaking extent.

Importance of the week-end tourist who is prevented from making an extended trip because of financial or time limitations is receiving increasing attention. Emphasis is placed on sporting attractions such as swimming meets, tennis matches, golf tournaments, pageants, automobile races, marine sports and horse shows. It has been found that by this means, week-end travel has been vastly stimulated. Investigation of methods to increase volume has disclosed that thousands of automobile owners search without success, unless directed, for reasonably short trips of an educational or pleasure value.

There was considerable variation in the volume of business accruing to individual units in the oil business in the first quarter of 1938. One of the large eastern marketing companies has had an increase of about 15 per cent in motor fuel distribution so far this year. Other companies have had increases ranging mostly from 3 to 7 per cent while some have suffered losses. In the cases of companies having less business for the first quarter than for the comparable period in 1937, a good portion of their losses have been in commercial consumer accounts. The indications are that private owners are consuming more gasoline by approximately 5 to 8 per cent than at the same time in 1937, which illustrates the importance of commercial vehicle operation in the general oil marketing picture.

Bureau Forecast

Tourist travel in the United States during 1938 will be equal or better than last year, in number of tourists and volume of expenditures, according to Joe H. Thompson, director of Conoco Travel Bureau, Denver, Colo.

This means, he says, that 47,250,000 tourists will make trips averaging 3,500 miles and travel in 13,500,000 automobiles. Each car will carry approximately three and one-half persons. These tourists will travel in every one of the 48 states and will spend a total of $4,750,000,000.

The tourist dollar, Mr. Thompson figures, is divided as follows: 20 cents transportation; 20 cents hotels and other lodgings; 25 cents for purchases in retail stores; 21 cents for eating in hotels and restaurants; 8 cents for amusement, and 6 cents for refreshments.

Several companies have based their dealer conferences during the late winter months in preparation for spring and summer business upon motion pictures. The films have been prepared to educate dealers on the functions of gasoline and lubricating oil. The usual spring change-over campaigns have been prosecuted with renewed vigor. The theme has been liberally sold to the public and has become almost a fixture in automobile driving.

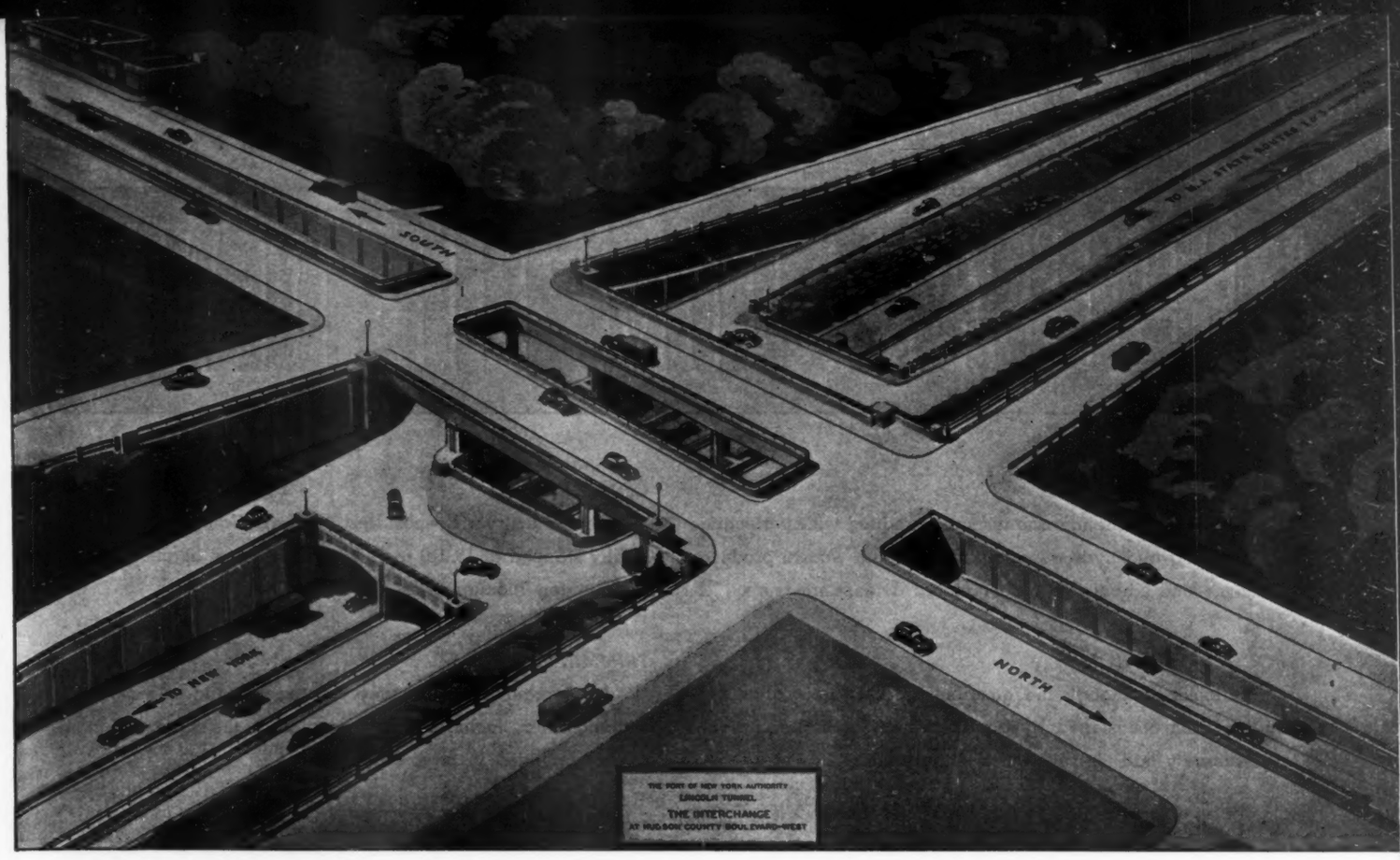
A sales manager of one of the largest companies said recently that tire, battery, accessory and specialty lines were not only productive of profit in their own right but were builders of repeat gasoline sales. Automobile drivers prefer to stop where they can replace a broken light bulb, a worn-out spark plug, obtain a new fan belt or other accessories while refueling.

The Texas Co. will feature "registered rest rooms." A fleet of 50 all-white cars is staffed with men assigned to various areas to inspect rest rooms in dealer stations. To display the "registered rest room" sign dealers must meet rigid standards of cleanliness. Laxity in meeting the standards is checked by members of the white fleet and the sign will be removed if necessary.

Improvements are being made constantly to the highway maps and periodicals published for the information of tourists during the summer driving months and this year is no exception. One of the large eastern companies, a subsidiary of Standard Oil Co. of New Jersey, is issuing a new map on the New England area and is publishing a separate edition of its "Esso Road News" for that section. The road news pamphlet, issued twice each month during the motoring season, carries stories of interest about the particular section in which it is intended for distribution through dealer outlets. All sports and events of local or national interest within the territory are described, and useful information for the tourist is included. Maps are issued at intervals of 15 days, showing the status of highways with construction projects designated.

Socony-Vacuum Oil Co., Inc., has added a large-scale map of the United States in three sections to its regular tourist service which includes state and regional highway maps and a publication, "Tours

SERVICE FOR TOURISTS—*Typing unit, Conoco Travel Bureau, where an individual letter is written to each Touraide recipient*



EXAMPLE OF IMPROVED HIGHWAYS—*Three-level traffic exchange at approach to Lincoln tunnel, New Jersey*

and Detours." The large-scale map sections have many interesting side trips to points of interest along the main routes shown in drawings on the back along with general information on the various states.

One class of motor fuel business for which competition will be more spirited this summer is that of marine craft. The greater bid for this type of business is based on two factors. In the first place, more individuals in financial position to do so are deserting the highways for the less congested waterways for their week-end pleasure trips. Popularity of motor boats, both inboard and outboard, appears to be growing rapidly, judged from attendance and actual sales at the annual power boat show in New York.

At least one company which has made only casual effort to capture business of the pleasure craft operator in the past is introducing a new series of marine maps this summer. The marine maps issued by oil companies for the pleasure and small commercial vessel operators are intended only for travel guidance near the coastline and on inland waterways. Attractions which can be reached with ease from the seashore are pictured in much the same fashion as on the highway maps. In addition, the marine maps show depth of water, refueling stations and inlets and harbors.

The main endeavor of the oil companies is to bring the attractions of travel before the public. Improvements in this service consist largely of better distribution of maps and travel topics, designed to attract attention to new and interesting sights, and special care in making travel comfortable from a standpoint of service.

Typical of the greater conveniences for motorists throughout the country is the completion of a second automobile tunnel under the Hudson River, supplying a third main artery for entrance to and exit from Manhattan.

The A.P.I. report this week covering gasoline tax payments by states shows the strong position of motor fuel consumption at the start of the year. The report based on tax payments indicates a gain of more than 6 per cent in gasoline consumption. It has been predicted by many that motor fuel consumption was running behind last year. The report showing January gains in all but four states follows:

GASOLINE CONSUMPTION BY STATES

(Figures in gallons)

	Jan. 1938	Jan. 1937
Alabama	17,302,000	15,945,000
Arizona	8,225,000	7,434,000
Arkansas	12,995,000	13,344,000
California	129,161,000	130,873,000
Colorado	14,458,000	13,729,000
Connecticut	20,682,000	20,475,000
Delaware	3,496,000	3,461,000
District of Columbia	10,272,000	9,810,000
Florida	31,910,000	30,509,000
Georgia	25,298,000	23,660,000
Idaho	5,054,000	4,169,000
Illinois	89,927,000	82,650,000
Indiana	41,394,000	37,845,000
Iowa	31,996,000	31,111,000
Kansas	31,556,000	27,226,000
Kentucky	18,503,000	16,724,000
Louisiana	18,348,000	17,193,000
Maine	8,097,000	7,522,000
Maryland	18,803,000	17,948,000
Massachusetts	43,335,000	43,047,000
Michigan	69,250,000	72,583,000
Minnesota	30,404,000	85,470,000
Mississippi	15,591,000	12,677,000
Missouri	44,093,000	38,242,000
Montana	6,555,000	5,441,000
Nebraska	15,982,000	13,613,000
Nevada	2,229,000	1,858,000
New Hampshire	5,177,000	4,850,000
New Jersey	54,159,000	53,066,000
New Mexico	6,639,000	5,661,000
New York	118,318,000	118,962,000
North Carolina	28,473,000	26,492,000
North Dakota	4,821,000	4,498,000
Ohio	88,843,000	88,369,000
Oklahoma	29,582,000	23,696,000
Oregon	14,188,000	11,833,000
Pennsylvania	94,950,000	91,436,000
Rhode Island	7,440,000	7,415,000
South Carolina	14,805,000	13,699,000
South Dakota	6,837,000	5,521,000
Tennessee	20,037,000	18,821,000
Texas	94,694,000	80,700,000
Utah	6,115,000	4,959,000
Vermont	3,805,000	3,600,000
Virginia	24,613,000	22,472,000
Washington	20,906,000	17,141,000
West Virginia	13,397,000	12,909,000
Wisconsin	32,297,000	30,411,000
Wyoming	3,533,000	3,278,000
Total	1,458,545,000	1,372,348,000
Increase	+86,107,000	6.28%

WHITE FLEET *of Texas Co. which carries on restroom inspection as one feature of campaign to stimulate touring*

SPARKS FROM THE NEWS

OIL AS FOOD

German and Italian scientists are credited with perfecting the cracking and hydrogenation of petroleum wax to produce much needed edible fats as a national defense measure.

FOR A BETTER HOLD

It looks as though the gasoline market, quiet after the buying rush occasioned by announcement of higher freight rates, merely had let go to get a better hold.

COMPETITION

The senator who said last week that there is no competition in the oil industry should announce to several sales managers that he is in the market for a car of gasoline or fuel oil and see what happens.

SPRING BLOOM

When Central Illinois emerges from the spring mud, we may expect to see the wildcatter out in all his glory. A year of intense and widespread exploration is under way.

COMPARISON

The industry's deepest test in Kern County, California, finally stopped at 15,010 feet. That is 27 times as deep as the Washington Monument is tall.

TRIMMINGS

In Georgia Saturday they erected a stand and filled it with notables, including the governor of the state, when a wildcat spudded in near Waycross.

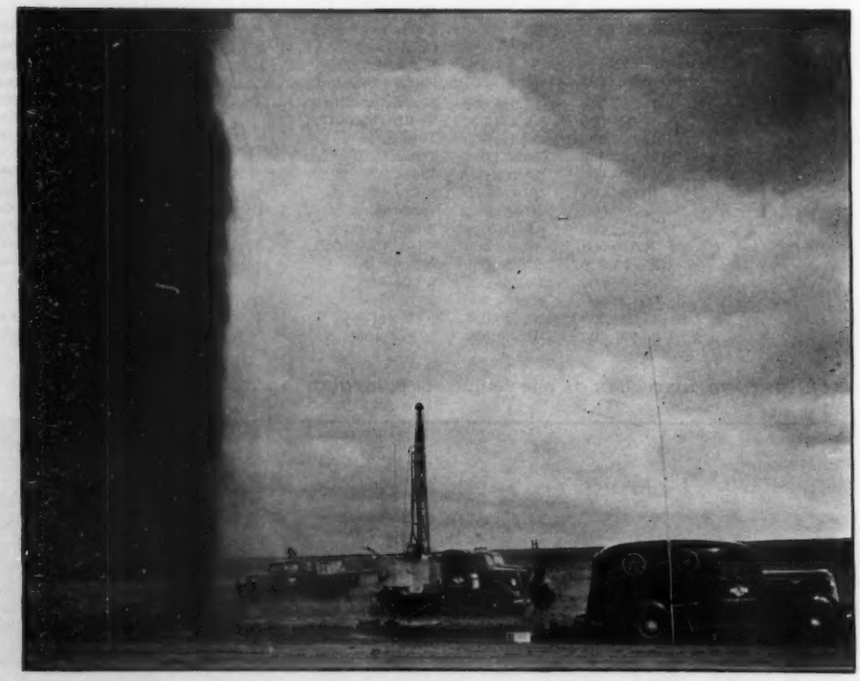
GASOLINE RECORD

National survey shows only four states consumed less gasoline in January than during same month last year. Total gain for the entire country was more than 6 per cent, establishing new record for that month.

CONTROL

K.M.A. reports show it is possible to develop a new major field without flooding the market. Present production is less than 10,000 barrels daily from 237 wells.

DIRT GUSHER



Testing refraction radio equipment before being sent to foreign field

WILLING

Texas proration officials are talking about extending the Sunday shutdowns to June 1. Operators appear willing provided it is necessary.

SUGGESTIONS

The Interstate Oil Compact Commission is open to suggestions. In fact, it is asking for them at its next meeting in Wichita.

EASY TO TAKE

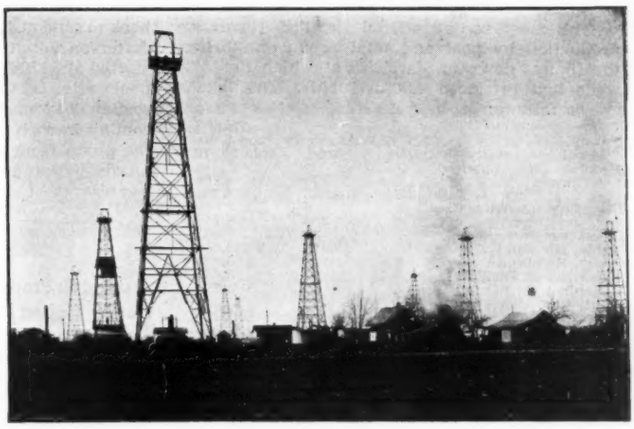
Annual statements of oil companies now being released are easy to take and tend to lighten the current gloom in general business circles.

TOO MUCH

Arkansas, without state control, is producing 52,000 barrels daily, or 25 per cent more than B. of M. recommendation.

Busy Second Year Is Promised in Illinois Fields

By JAMES McINTYRE

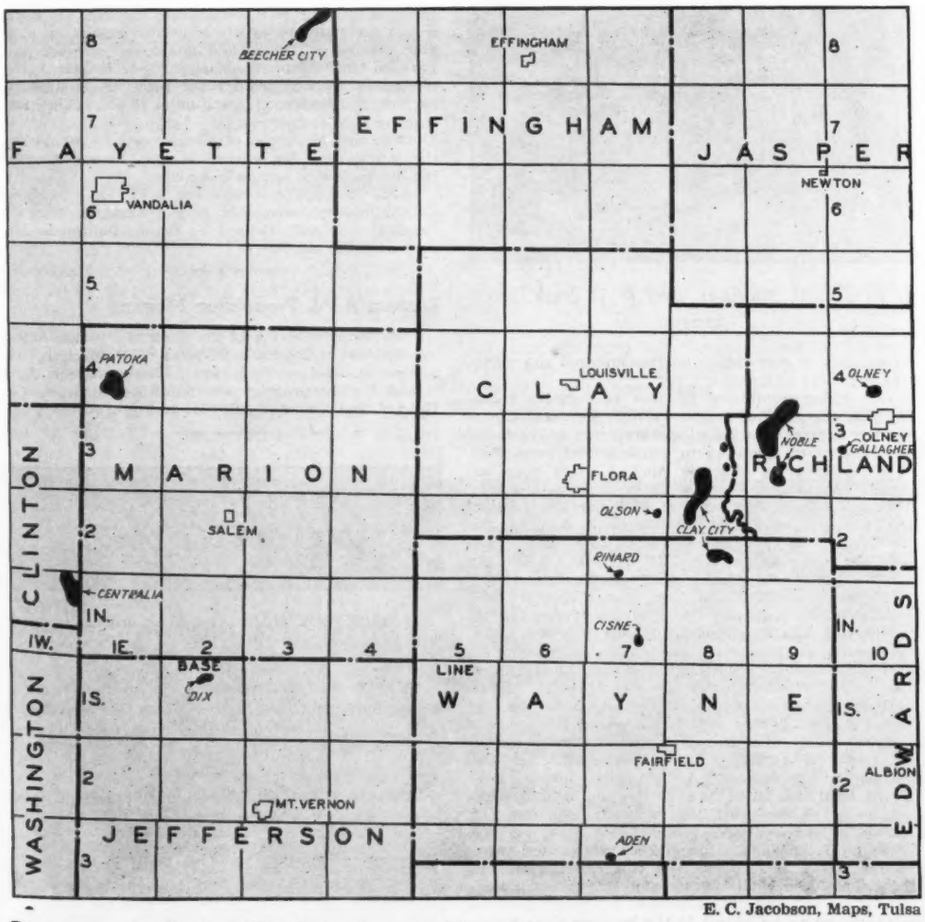


North end of the village of Noble at the height of a townsite drilling campaign

Fifteen oil pools were opened in 14 months of exploration of Central Illinois, commencing with the Patoka pool by the Adams Oil & Gas Co. and Felmont Corp. in northwestern Marion County on January 27, 1937, down to the discovery of the Olson pool in southern Clay County in February, 1938. At this writing there are 27 rigs up and 127 wells drilling, a total of 154 field operations in 37 counties of the state and there are over 350 producing oil wells as a result of the drilling campaign which had its inception near the village of Patoka.

The state of Illinois has a fine system of trunk highways, but departing from these onto the dirt roads, which must be traversed to reach wells or locations, weather conditions have much to do with advancing or retarding operations in the fields. These dirt laterals now are in a condition that makes the transportation of heavy materials very difficult where it is not impossible. The one well in the Aden pool in southern Wayne County has for some time been surrounded by water, making it necessary to use boats to and from it. As soon as the roads are dry the big campaign of 1938 will begin, and largely on the results of this year's field work will depend the future of Central Illinois as an oil region. It is expected that wildcatting will far exceed that of last year in number of wells drilled, and while it would be idle to attempt to estimate results, Illinois operators are confident that in the long run many pools will be discovered in the big area.

Over 5,000,000 bbls. of oil has been produced in the Central Basin fields since the opening of the Patoka field. Based on the production by pool up to March 22, at which time 4,903,984 bbls. had been produced, 2,267,624 bbls. was credited to Richland County; 1,968,830 bbls. to Clay County, and 111,710 bbls. to Wayne County, all from deep pays. Marion County with a total production of 460,083 bbls. led in production from the shallow sands. Most of the production in the deep part of the basin, in Richland, Clay and Wayne counties, has come from the McClosky formation while production in Fayette, Marion, Jefferson and Clinton counties has come mostly from the Benoist sand. The Centralia field in Clinton and Marion counties; the Dix pool in Jefferson County and the Beecher City pool in Fayette County, all producing from the Benoist sand, are new and their production is nearly all a thing of the future. Some of the recent wells in the Centralia and Dix pools have been larger in initial production than any in the Patoka pool. In this week's field report a 404-bbl. well in the Dix pool is recorded, while the Centralia pool in Clinton County has a new well which pumped 449 bbls. the first day and 467 bbls. the second day. No such wells were found in the Patoka pool, also a Benoist sand producer.



E. C. Jacobson, Maps, Tulsa

Discoveries in Central Illinois in the past 14 months. The Beecher City pool in Fayette County is also known as the Louden pool, and the Aden pool in Wayne County is also known as the Barnhill pool. The total production of all the pools up to date exceeds 5,000,000 bbls.

Benoist Resembles Burbank

The Benoist sand is said by operators familiar with the Burbank field in Oklahoma to have characteristics of the Burbank sand. It has not yet yielded wells that produced as largely in their initial stages as the big wells in the Burbank field, and the Benoist has not shown the reservoir energy found in the Burbank sand, but its otherwise close resemblance to Burbank leads to the belief that in some parts of the state it will yield wells of larger initial production than it has done thus far.

Before exploration started last year much had been said of the possibilities of finding oil in the St. Peter sand, (Ordovician) which is equivalent to the Wilcox sand in Oklahoma. The St. Peter sand covers a vast area from central Ohio to the Mississippi River, but it had never produced anything but water in the tests that had been drilled to it in Ohio, Indiana and Illinois. It has not yet shown any indications of being an oil producer in the Illinois Basin and is now held in little regard by Illinois operators. Outside the deep-sand area in Clay, Wayne and Richland counties, the Benoist sand (upper Mississippian) will be the objective of wildcatters, but where it fails to produce in the lower horizons, lower Mississippian and Devonian will be tested by those operators whose financial situation can stand the cost of deep drilling. In the old fields in eastern and southeastern Illinois most of the 250,000,000 bbls. produced there has come from Pennsylvanian and Mississippian series of pays. Some oil was found in the Devonian and

Ordovician. In the central and south central parts of the state the whole stratigraphic range appears to be present, but thus far all the production has come from the upper and lower Mississippian sands and limestones.

Production by Pool

The most recent official detailed report on production by pool and total production brings the figures down to March 22 at which time 334 wells had produced 4,903,984 bbls. The details are as follows:

Pool and county—	No. of wells	Av. daily prod.	Total prod. to Mar. 22, 1938
Beecher City (Louden), Jefferson	4	270	5,708
Clay City, Clay	88	3,955	1,958,256
Clay City townsite, Clay	1	0	3,069
Dix, Jefferson	2	286	8,146
Olson, Clay	1	90	7,505
Noble, Richland	91	15,378	2,223,310
Olney, Richland	1	113	10,020
South Noble, Richland	3	197	25,639
Gallagher, Richland	1	28	4,150
South Clay City, Wayne	6	458	83,225
Rinard, Wayne	1	13	3,275
Cisne, Wayne	2	46	23,950
Aden, Wayne	1	0	1,260
Patoka, Marion	95	2,394	460,083
New Centralia, Clinton	37	2,968	86,388
Total	334	26,196	4,903,984

The Patoka pool in Marion County, the Clay City pool and its extensions and the Cisne and Noble pools including extensions have all been recorded in previous reviews of the new Illinois campaign.

This Year's Developments

The new Centralia pool was opened in December by Adams Oil & Gas Co. with its No. 1 Schmidt, C SE SE NE section 2-1n-1w. It had Benoist sand at 1,347-84 feet, and made 90 bbls. of 39.7-gravity oil the first 24 hours. The Centralia townsite discovery was made by Adams Oil & Gas Co. No. 1 Hefter Heirs, 150 feet north and 450 feet west of SE cor. NE section 13-1n-1w, in February of this year. The well produced 342 bbls. of oil from Benoist sand at 1,350-70 feet.

The Aden pool in Wayne County was opened by the Texas Co No. 1 Silverman, C E half SW NW section 16-3s-7e, late in January. The well was acidized in the McClosky sand (lower Mississippian) at 3,276-87 feet, total depth, and produced 385 bbls. the first 19 hours. The company has had no opportunity of starting a second well because of high water that surrounds the property.

Olson Drilling Co. opened a pool on the Irwin estate in C N half SE NW section 12-2n-7e, Clay County, in February, 1938. It produced 149 bbls. of oil and 51 bbls. of water after McClosky lime had been acidized at 3,060-76 feet, total depth.

Vermilion Oil Co. No. 1 Duff, a wildcat drilled in C N half NE SE NE of section 19-3n-8e, Clay County, completed in January, opened production on the Clay City townsite but it produced only 3,069 bbls., and then quit.

The Gallagher pool in Richland County was opened by W. B. Frost No. 1 Farris, C SW SW SE section 18-3n-10e, in McClosky sand at 3,084 feet, total depth with an initial production of 215 bbls.

The Olney pool in Richland County was discovered by Bur-Kan Petroleum Co. in its No. 1 Allen, C SW NW section 27-4n-10e, early in January of this year. The well flowed 315 bbls. of oil in 24 hours from McCloskey pay at 3,036-45 feet, total depth.

While the Beecher City pool in Fayette County was opened late in November by Carter Oil Co. in its No. 1 Mary Miller, C W half NW NW section 12-8n-3e, the discovery well was not completed until March 25. This well had been drilled into Devonian lime to 3,120 feet and no oil or gas was found in the lower levels. It was plugged back to Benoist sand where it produced 200 bbls. per day. The crew has experienced much difficulty in completing this well and recently ripped the pipe at 1,525-38 feet and after a 20-quart shot in the sand thus uncovered the well produced 93 bbls. per day. The first well actually completed in the field was Carter Oil Co. No. 1 Clow, C E half SW NE section 15-8n-3e, which extended the pool southwesterly. It was a 90-bbl. well at 1,486-93 feet, total depth 1,508 feet. The Carter Oil Co. has a big block of acreage around the wells and expects a large ultimate production from the block. The company's No. 2A Clow, C W half SW NE section 15-8n-3e, started at 370 bbls. a day swabbing and flowing after a 15-quart shot in Benoist sand at 1,485-1,501 feet, greatly exceeding the performance of the two first wells in the pool.

Carter Oil Co. No. 1 Tate, in section 10-1s-2e, which had been drilled to 3,874 feet and plugged back to sand at 1,980-90 feet, opened the Dix pool in Jefferson County on the last day of December. It started at 58 bbls. per day. The second well in the pool Carter Oil Co. No. 1 Doughitt, C E half NE SE section 9-1s-2e, extended the pool southwesterly coming in with a production of 147 bbls. a day on the pump from sand at 1,947-62 feet. Both wells produce from Benoist sand. The Carter Oil Co. has a large block thereabouts. Carter will develop its Fayette and Jefferson counties properties this year expecting to drill 50 wells on the two blocks.

Bradford Producers Meeting Hears Collett and Brown

BRADFORD, Pa.—J. D. Collett, president of the Mid-Continent Oil and Gas Association, and Russell B. Brown, general counsel of the Independent Petroleum Association of America, told the members of the Bradford District Pennsylvania Oil Producers Association at their annual meeting in Bradford, that correction of evils affecting the industry is the individual responsibility of every operator. One hundred and thirty-five members attended.

J. D. Collett, speaker, and R. T. Zook, toastmaster

An audience affected by four consecutive reductions in the price of crude, with no prospects of immediate improvement heard speakers urge self-restraint on the part of operators to avoid federal regulation.

Curtailed runs, effective April 1, have been announced by Quaker State Oil Refining Corp., Farmer's Valley Refinery, Bradford Oil Refining Co., Kendall Refining Co., and United Refining Co. In addition, the Bradford Transit Co. stated that it would run crude only for immediate delivery. Both Quaker State and Kendall announced 15 per cent curtailments.

Lower industrial and export demand have resulted in a steady increase in Pennsylvania lubricating oil inventories. The Pennsylvania industry, dependent on lubricating oil shipments, has suffered accordingly.

It was an audience characterized more by pessimism than optimism that heard Mr. Collett state: "Some of the evils affecting the oil industry must be corrected by us or they will be corrected for us in a way we won't like. If this happens, those who administer such regulation will not be practical oil men but political appointees." A little more individual effort in local associations will do the job, he said, without incurring the possibility of "conviction like our friends in Madison."

Ralph T. Zook, of Sloan & Zook Companies, toastmaster, asked Mr. Collett how this can be done in the light of the Madison case and Mr. Collett, speaking for himself and not as head of his association, replied, "If every individual in the business does voluntarily what he knows to be right, if the refiner cuts his runs and the producer his production, the whole thing could be done in no time."

Mr. Brown cited defeat of attempts to repeal the Connally "hot" oil law, the defeat of the Boland fuel oil tax bill and retention of the Bureau of Mines allocation for oil demand forecasts as results of association work.

Declaring the antitrust laws were not placed on the books to prevent intra-industry agreements, Mr. Brown said the Independent Petroleum Association is seeking governmental approval of the right of industries to make agreements that will bring stability to them. It is essential for the oil industry, entrusted with conservation of an invaluable natural resource, he said. He blamed the Madison verdict for much of the industry's present distress.

J. C. Martin, executive secretary, and J. G. Bauer, editor of the association's organ, also spoke. Directors elected are: D. T. Andrus, H. G. Bancroft, A. E. Booth, George Bovaird, Jr., E. H. Bryner, D. W. Daly, M. L. Dana, W. N. Davis, Robert A. Digel, F. D. Dorn, E. C. Emery, Hugh Grant, Jr., R. M. Haskell, William J. Healey, H. H. Jeutter, F. H. Johnston, J. Paul Jones, Charles E. Krampf, R. C. Lloyd, Tom D. Mallory, Parker L. Melvin, John Messer.

N. V. V. F. Munson, Roy Oakes, Wilson K. Page, Cornell Pfohl, Jr., R. S. Pringle, Jr., George Rhodes, H. M. Ryder, A. Schorman, A. C. Simmons, G. A. Simpson, W. J. Sloan, Lynn G. Smith, C. F. Stevenson, C. E. Streeter, D. B. Tanner, T. P. Thompson, Jr., J. Blaine Walker, H. J. Walter, C. L. Wann, Neal K. Watson, G. B. Wood and Archie L. Yerdon.

New members of the board are C. F. Krampf, N. V. V. F. Munson and Neal K. Wilson.

Senate Subcommittee Hearing On Petroleum Marketing Bill

WASHINGTON, D. C., Apr. 4.—Advocates of the Gillette-Biermann bill to divorce marketing of petroleum products from production, refining, and transportation were heard on March 31 by a subcommittee of the senate judiciary committee. Four witnesses appeared for the measure which would make it illegal for any person to be engaged in the marketing in interstate commerce of refined petroleum products, while also engaged in production, refining, or transportation of such products. No one appeared in opposition and Senator Borah of Idaho, a member of the subcommittee, said he has received no criticisms of the measure, while a considerable number of letters and telegrams in favor of it have come to him. He charged "four or five big oil companies with controlling the price of gasoline and oil. You will find no competition in prices. That's been true for four or five years."

Chairman McCarren of Nevada said he would hold the record open for a week in case anyone opposing the bill wishes to submit testimony.

A. C. Glenapp, of Manchester, Iowa, Iowa Independent Oil Jobbers Association; H. F. Remington, Esta Co., Reading, Pa., and Richard E. Breed, Baltimore, Md., supported the bill.

Eastern A.P.I. Production Meeting

The annual meeting of the Eastern District, American Petroleum Institute Division of Production, will be held at William Penn Hotel, Pittsburgh, Pa., April 14 and 15. The program was published on page 64 of The Oil and Gas Journal, March 31.

Obituaries

GEORGE TROUTMAN, former Tulsa drilling contractor, died April 2 at Jacksonville, Fla.

ALFRED H. TROTTNOW, 52, of Tulsa, treasurer of Braden Steel Corp. and Braden Winch Co., died April 3 from injuries suffered in an auto crash near Oklahoma City.

ARTHUR WINSLOW, 77, of Boston, president, Boston Petroleum Co., died March 28.

LESLIE A. FISHER, 36, a geologist for the Sinclair Prairie Oil Co., was killed April 1 when his car skidded into the Galveston, Tex., causeway railing.

L. C. LONGAKER, 82, vice president and treasurer of National Transit Co., died in Oil City, Pa., April 3. He was originator of accounting and checking methods widely used in the oil industry.

Mexican Situation Presenting New Series of Complications

By HENRY D. RALPH and H. STANLEY NORMAN
Washington New York

Through the maze of diplomatic negotiations, political issues, legal procedures and private dealings surrounding the expropriated oil properties in Mexico the chances appear slight for recovery by private owners.

The 17 American and British companies have petitioned the district court for an injunction against enforcement of the expropriation decree. They will also file an appeal against termination of labor contracts with their 18,000 workers and a request to the department of national economy for administrative revocation of Cardenas' decree on grounds that article 27 of Mexico's constitution provides for expropriation only of lands and waters in the advancement of the "Mexico for Mexicans" program. The companies contended their tools, plants and equipment were seized.

The Mexican ambassador conferred with President Roosevelt April 5 to express the appreciation of President Cardenas for the satisfactory manner in which negotiations over the oil controversy are proceeding. He said his conference at the White House resulted in a mutual exchange of friendly views.

Three representatives of Standard Oil interests called on Secretary Hull Tuesday for a conference described as a general exchange of information with no decisions involved. They were W. S. Farish, president, and T. R. Armstrong of Standard of New Jersey, and Eugene Holman, president of Huasteca.

Cardenas' Pledge

Tension between the United States and Mexico was eased by an ingratiating reply from President Cardenas to a note from Secretary of State Hull requesting an explanation of how Mexico intended to pay for the expropriated properties, but from a practical standpoint the reply was valueless.

Cardenas wrote that "Mexico will know how to honor its obligations," but there are no visible means of paying for the seized properties unless the Mexican government recedes from its announcement to restrict oil sales to democratic countries.

Negotiations have been reported under way between unidentified interests represented by Francis W. Rickett, British promoter, and Bernard E. Smith, Wall Street broker, and the Mexican government. Rickett and Smith, who left Mexico City April 1, were reported negotiating for about 25,000,000 bbls. of Mexican oil. President Cardenas was said to have insisted on a deposit of $5,000,000 before approval of the contract, but he was also reported to have accepted a tentative draft of the contract which presumably awaits only the deposit for final consummation. The price per barrel was not disclosed, but it was said in Mexico City to be considerably below the world market. The 25,000,000 bbls. mentioned is approximately equal to Mexico's petroleum exports in 1937. In some quarters it was considered possible Rickett and Smith were dealing on the speculation that the price would enable them to sell the oil in various world markets. Rickett had been in the United States several weeks before going to Mexico and was said to have spent a month or more in California where he discussed heavy fuel oil with several suppliers.

On arriving in New York late last week, Mr. Rickett issued the following statement:

"In view of the conflicting reports in the press regarding my activities in Mexico, I wish to make it clear that no agreement has been entered into between the Mexican government and myself and associate, Bernard E. Smith. Conversations and exchanges of views between ourselves and high officials of the Mexican government have taken place and I am hopeful of a satisfactory outcome. These conversations will be continued in Mexico City in the course of this week, and they will have no bearing on expropriation."

American companies, whose properties were seized, have requested the State Department to take steps to prevent the sale and movement in international trade of the oil and products from the seized properties on the ground that any sale of oil taken from the properties would be without title. It was contended that even if the expropriation law were finally upheld in a court test just begun it would be necessary to reimburse the owners before a clear title could be given.

Revelation that Rickett was dealing with the Mexican government for oil was believed the basis for the protest lodged at Washington. Rickett's name became familiar when he negotiated the Ethiopian oil concession on the eve of the Italian invasion. Because of international entaglements, the group which was to have received the concession, accepted this government's advice and dropped it.

Benefits to Gulf Coast refiners from the Mexican situation became more evident last week, although the extent was difficult to gauge. It was estimated that six tankers originally instructed to load at Mexican ports had been rerouted to the Gulf Coast. Greater shipments and the stoppage of Mexican oil were responsible for an advance of an eighth of a cent per gallon in the Gulf Coast gasoline market. Part of the heavier movement was seasonal.

Gulf Stopgap

Dullness of the heavy fuel oil market in this country may be cushioned by cessation of Mexican shipments which will force at least a part of the business normally supplied from Mexico into the hands of American refiners. With exception of two companies involved in the Mexican expropriation proceedings, however, the permanent replacement supply will be drawn from Venezuela, Colombia or other South American countries.

As a temporary stopgap to avoid higher tanker rates and loss of time, several boats were diverted to the Gulf Coast when the Mexican supply was interrupted March 18. The two companies mentioned have no other foreign crude reserves

Acme

New board of directors of former Huasteca Petroleum Co., now designated as "Section Fifth" of the new Mexican oil organization: Teodula Angulo, board president; Carlos Reynoso, general sales manager; Hector Lopez, sales manager; Alfonso Mencarini, general auditor; Salvador Herrera, sales manager; and Manuel Leiva, sales manager

developed and will be compelled to take care of former Mexican withdrawals from the United States or purchase in the foreign market, probably the former, as indicated by developments.

Questioned at Warm Springs, Ga., President Roosevelt said the United States would not press for private company claims beyond the investment, less depreciation. Under strict interpretation of this version of an acceptable basis for settlement owners of those Mexican properties which have "paid out" may actually find themselves billed by the Mexican government for any profits realized. A counterpart in this country would be termination of a lease as soon as the investment was realized. The United States government was reported from Warm Springs as being unsympathetic to oil company claims based on prospective profits.

Developments during the week included almost complete cessation of producing and refining activities in Mexican fields. Some estimates of the idle producing wells ran as high as 85 per cent as storage filled and purchasers of the confiscated oil were lacking. Mexican Eagle Oil Co. refinery, which normally processed about 60,000 bbls. of crude a day, was shut down. The Pierce Sinclair plant was operating at less than half capacity and the Huasteca plant was completely idle. Internal friction between the labor leaders and union members rose as the workers protested against wholesale layoffs, reduced wages and cessation of medical and other benefits enjoyed under company management.

Payroll Short

On March 26, the first payday following expropriation, workers were paid only a part of the wages due. Some former workers of one large company received 100 per cent of old salaries without any overtime pay, but only partial salary payments were made to most of them. It is estimated only 60 per cent of the salaries due on the old basis was paid.

The Central Petroleum Union Council took cognizance of the fact that part of section 1 of the union in Tampico had refused to accept the administrative board appointed by the council. The central council said it was surprised. Employes were said to be dissatisfied over working under joint government and union direction.

Oil syndicate leaders were instrumental in launching a campaign for a new political party to be known as the National Institution, to include oil workers, farm workers and part of the army. The move was an apparent effort to block any possibility of retracing the steps in expropriation. Meanwhile, plans were going forward for the special session of the Mexican Congress April 11. One matter the congress will consider is the 100,000,000 peso internal bond issued proposed by President Cardenas to raise $20,000,000 with which to pay the oil companies. The value of the American oil lands has been estimated at $200,000,000 and that of British concerns at $250,000,000.

Auditors of the labor syndicates in Mexico were reported going through the company books and files with the idea of trumping up as many claims as possible to be used in diminishing the final basis of settlement.

Beneath the flowery language of the exchange of diplomatic representations between the United States and Mexico over the oil situation, it is evident this country's Latin-American policy is fast approaching a crisis.

"Good Neighbor" Policy

If Mexico is permitted to make good its confiscation of foreign oil properties without prompt and adequate compensation it may mean that other countries to the South will take similar steps against American investments, whereas if the United States takes stern measures to force Mexico to back down on its program to "Mexicanize" agriculture and industry it may mean that our sister republics will conclude that our protestations of noninterference were meaningless and much international good-will would be lost.

England and other European nations are looking to the United States, under the Monroe Doctrine, to take action which will safeguard the rights of their nationals in Latin America. Mexico's economic condition is at a critical point, giving rise to rumors of political unrest which might lead to internal upheavals and possibly civil war or the formation of an even more radically socialistic regime. And over all hangs the shadow of Japanese interest in Mexico, since Japan is believed to be anxious to get not only Mexican oil but an excuse to develop a sphere of influence on Mexico's southern Pacific Coast.

Even if a satisfactory figure should be agreed upon as the limit of the oil companies' claims, it is difficult to see how the Mexican government will be able to make payment in view of its present financial straits. Payment in bonds would hardly be satisfactory, since Mexico has not paid interest on bonds for earlier expropriations of agricultural lands. To make payment in foreign currency, Mexico must secure exchange by exporting, and its chief exports have been petroleum and silver. At present the United States is purchasing only a small quantity of silver. There are no other large foreign markets.

Acme

Vicente Cortes Herrera, general manager of Mexican administration in charge of expropriated properties. He was undersecretary of communications and public works

Meanwhile, it is understood the oil companies are taking legal steps in Mexico to have the expropriation order set aside and observers in Washington suggested this might prove to be a way out. This government unofficially might make it so clear to the Mexican government that demands for payment cannot be met that the Cardenas administration would consent to having the expropriation order set aside or modified provided some legal technicality could be found which would save its face. With the necessary face-saving legal technicalities before the courts, with strong but secret diplomatic pressure from Washington, and with Mexico's internal economy and political unrest nearing a crisis, observers feel Cardenas may be able to restore operation of the properties to their owners under certain limitations which would not look like abandonment of the "Mexicanization" program.

National Petroleum Association Changes Date of Meeting

The National Petroleum Association announces in connection with its semiannual meeting to be held at the Cleveland Hotel, Cleveland, Ohio, next week that owing to many requests to avoid conflict with Good Friday the session on refiner-jobber relations originally scheduled for that morning will be held on *Wednesday, April 13, at 2 p.m.* There will be no session on Friday.

The group session of the Department of Manufacture on "Propane Treatment of Lubricating Oil Stocks" will be held Wednesday at 4:30 p.m. Otherwise there will be no change in the program as published on page 64 of The Oil and Gas Journal, March 31.

The meeting will close with the Fellowship supper on Thursday, April 14 at 6:30 p.m. (as guests of the Canfield, National and Sohio companies).

Earnings of Oil Companies Reported for Past Year

Net income of 24 leading oil companies reporting for the year ended December 31, 1937, totaled $271,353,597, an increase of 30 per cent over the $208,490,288 reported by them in 1936. This marks the fifth successive year in which earnings showed a substantial gain, reflecting the continued record consumption. Gross revenues of this group averaged about 15 per cent higher in 1937.

Aggregate cash dividend disbursements during 1937 totaled $151,107,875 compared with $123,563,011 in 1936, an increase of approximately 22 per cent. Dividend payments in 1937 represented 56 per cent of the combined net earnings, while in 1936 these companies distributed 59 per cent of their combined earnings.

Continental Oil Co., Phillips Petroleum Co., Texas Corp., and Tide Water Associated reported for 1937 the highest earnings in their history with individual increases ranging from 35 per cent to 55 per cent over 1936. Among other companies reporting increases of more than 30 per cent are: Atlantic Refining, 35 per cent; Lion Oil, 59 per cent; Ohio Oil, 50 per cent; Plymouth Oil, 69 per cent; Pure Oil, 49 per cent; and, Union Oil, 97 per cent. Exceptions to the general improvement were Barnsdall Oil Co., Pacific Western Oil Co., Seaboard, Standard Oil Co. of Nebraska, and Standard Oil Co. of Ohio. Standard Oil Co. of Indiana net income for 1937, estimated at $55,900,000 or $3.66 per share as compared with $46,883,448 or $3.09 per share in 1936 is included in the totals set forth above but is not shown below.

(Carl H. Pforzheimer & Co.)

		Net income	Earned per common share
Atlantic Refining Co.	1937	$9,935,045	$3.51
	1936	7,342,197	2.59
Barnsdall Oil Co.	1937	1,903,029	0.85
	1936	2,262,545	1.01
Continental Oil Co.	1937	†13,948,460	2.98
	1936	†9,612,597	2.05
Houston Oil Co.	1937	1,574,327	0.94
	1936	500,441	d0.03
Lion Oil Refining	1937	945,335	2.17
	1936	594,735	1.43
Ohio Oil Co.	1937	11,862,107	1.30
	1936	7,881,571	0.70
Pacific Western Oil	1937	1,388,710	1.39
	1936	1,582,326	1.58
Phillips Petroleum Co.	1937	24,113,874	5.42
	1936	17,875,489	4.02
Plymouth Oil Co.	1937	2,935,342	2.85
	1936	1,739,682	1.66
Pure Oil Co.	1937	11,403,805	2.15
	1936	7,658,372	1.63
Seaboard Oil Co.	1937	2,447,130	1.97
	1936	2,485,676	2.00
Shell Union Oil Corp.	1937	20,668,880	1.44
	1936	‡22,494,364	1.57
Skelly Oil Co.	1937	6,488,346	6.07
	1936	4,850,315	4.42
South Penn Oil Co.	1937	4,643,266	4.64
	1936	3,589,807	3.59
Standard of Kansas	1937	*781,783	6.93
	1936	257,081	1.91
Standard of Kentucky	1937	4,182,900	1.60
	1936	3,793,451	1.48
Standard of Nebraska	1937	d96,125	d0.58
	1936	74,326	0.42
Standard of Ohio	1937	3,362,960	3.67
	1936	4,194,314	4.77
Sun Oil Co.	1937	9,544,085	3.86
	1936	7,563,554	3.25
Texas Corp.	1937	54,574,319	5.02
	1936	38,260,341	4.10
Texas Pacific Coal & Oil	1937	983,303	1.11
	1936	642,330	0.72
Tide Water Associated	1937	15,801,383	2.08
	1936	10,217,928	1.03
Union Oil Co.	1937	12,061,332	2.58
	1936	6,133,398	1.40

d Deficit or loss. *Includes profit of $332,660 on sale of leases and royalties. ‡Includes profit of $2,839,504 from sale of investment in affiliated company. †Includes non-recurring profits of $57,487 in 1937 and $1,386,735 in 1936.

West Virginia Oil and Gas Association Convention

CHARLESTON, W. Va.—The annual meeting of the West Virginia Oil & Natural Gas Association will be held at Charleston on July 27 and 28. Edwin Robinson, secretary-treasurer, announces sessions will be held in the Scottish Rite Auditorium where the annual banquet will be held the night of July 27.

Madison Decision Not Expected For Weeks or Months

By R. B. PYRE

MADISON, Wis., Apr. 5.—Decision of Federal Judge Patrick T. Stone on the motions of major oil company officials to set aside the verdict convicting them of conspiracy to violate the antitrust act will not be made known for a matter of weeks, possibly months.

At the close of arguments here last Friday, Judge Stone took the entire matter under advisement, announcing that he would give the accompanying briefs thorough study. He also indicated he will call all the principals together again to hand down his decision from the bench.

Argument during the week centered around the following salient points:

1. "Newly discovered evidence" cited as grounds for a new trial on behalf of Henry M. Dawes, president of the Pure Oil Co.

2. Contentions that the jury had not had opportunity to consider the case in terms of the individual defendants.

3. Announcement of counsel for the Barnsdall Refining Corp. that it would avail itself of every possible technicality as a result of the government's attitude toward the defendants.

4. A defense question, while conceding the impartiality of the court, as to whether or not a fair trial was possible under all the circumstances.

5. The government's contention that the guilt of company presidents was properly assumed in the light of circumstantial evidence and the "composite whole" of proven facts.

6. The defense position, in answer to this, emphasized the court's instructions that mere knowledge was not sufficient to convict the presidents and that participation or authorization of the alleged gasoline price fixing scheme must be shown by affirmative word or act.

The evidence supporting demand for a new trial in the case of Mr. Dawes was submitted by Charles I. Francis, Pure Oil attorney, after government attorneys had argued that Dawes must have had knowledge of the plan for purchase of distress gasoline from independent refiners because he was a member of the national planning and coordination committee, to which C. E. Arnott, "chief stabilizer" and alleged "master mind," reported in detail, and Arnott, it was pointed out, testified that he reported to a meeting of the "full committee" on the then proposed plan.

P. and C. Meetings

Francis produced, and asked the court to receive, a copy of the minutes of the P. and C. meetings held on January 8 and 9, 1935, which showed that Dawes and E. G. Seubert, president of the Standard Oil Co., Indiana, and also a member of the P. and C. committee, were not present at the sessions.

The buying plan, which the indictment charged was adopted as an artificial means of raising the tankcar price of gasoline, had not been formalized at that time, and Arnott's report on January 8 and 9 informed the P. and C. committee of a meeting held in Chicago January 4 at which a committee had been named to study the plight of small refiners and suggest a remedy.

John H. Lewin, of the government staff, objected. It is the government's contention, as far as the record shows, that Dawes and Seubert were present, he insisted.

Judge Stone, however, retained the minutes in his possession for consideration. "What this court wants is the truth," he declared.

Bethuel M. Webster, of counsel for Edward L. Shea, Noel Robinson and John W. Warner, officials of the Tide Water companies, raised the point that the jury had not had opportunity to consider the case in terms of the individual defendants.

The defense had grounded its strategy on a contention that the buying program was "legal, honest and decent." With the exception of Arnott and Robert W. McDowell, chairman of the tankcar stabilization committee which directed the Mid-Continent purchasing, none of the defendants took the witness stand, and at the close of the trial defense attorneys had "regretfully put aside" their desire to argue the innocence of the individual defendants, Webster said.

W. D. Loucks, attorney for the Barnsdall Corp., announced his intention to "take advantage of every technicality" after reminding the court that E. B. Reeser, its president, had been praised in the summer of 1936 by Interior Secretary Harold L. Ickes for his "wonderful work" as a member of the planning and coordination committee and "a few minutes later was indicted by the government for the same work."

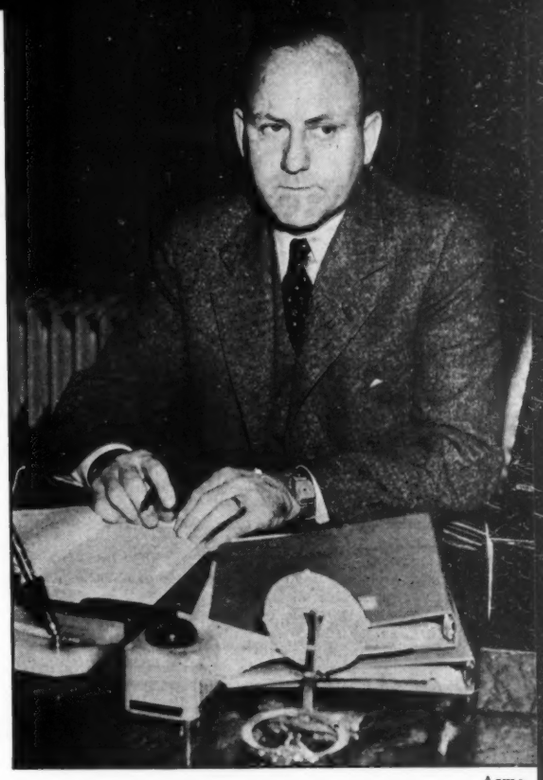
Judge Stone remarked that "you may have something there" when Loucks charged that Reeser was indicted as a company president, whereas the Barnsdall Refining Corp., indicted as a corporate defendant, was an "unborn baby" at the alleged inception of the consiracy, not having been incorporated until June, 1935, and that Reeser, therefore, was not properly indicted as a company president.

Lewin replied, in response to an inquiry from the bench, that Reeser was indicted as an individual and was merely "described" in the indictment as the president of Barnsdall.

Four Presidents

The week's arguments, at the outset, centered upon motions in behalf of four company presidents against whom the evidence admittedly was circumstantial, though the government reasoned that the case against them, though "different" was as strong as that against those allegedly connected by "direct proof." These four are Dawes, Seubert, Jacob France of Mid-Continent and Dan Moran of Continental. (See The Oil and Gas Journal, March 31, 1938.)

Defense attack was centered particularly upon the prosecutions claims that the failure of any presidents to take the stand to offer "affirmative proof" of their innocence was a significant indication of guilt and that the "positive connection" of six other presidents with the conspiracy was a "strong circumstance" justifying an assumption that these four also participated.



Acme

Federal Judge Patrick T. Stone

Judge Reserves Opinion

"I'm satisfied of the president's knowledge of a buying program, but I'm not going so far as to say now that I believe they knew it was illegal," Judge Stone said. "What evidence is there that they participated?"

"If this program went two years and all these millions were coming into the coffers of these companies, is there anything unreasonable in drawing the inference that they authorized it?" Lewin countered. "I can't believe," he added, "that the jury was wilfully disregarding your honor's instructions."

Stone asked if it wasn't possible that the presidents, as the defense contended, might have attributed the price advance to the "hot oil" act, general return of prosperity, curtailed refinery allocations, low inventories, and other factors.

Shell's Position

In a plea for Alexander Fraser and P. E. Lakin of the Shell Petroleum Corp., Attorney Samuel T. Mitchell, St. Louis, argued there was no proof Fraser could have received any idea that the buying program was anything other than a legal one such as that described in the court's instructions, and that Lakin, at the only meeting he attended, could have learned of nothing other than a "legal program" as defined by the court.

W. P. Z. German, similarly arguing for President W. G. Skelly of the Skelly Oil Co., demanded to know how Skelly, who attended only the January 4 meeting, could know that the committee appointed there would "plan something the government would consider a conspiracy." And as to the prosecution's claim that the various presidents must have known about the plan because of the admitted publicity, German contended the program, as published in the press, was "devoid of any illegality."

Nobody connected with the Skelly company was on any committee connected with the program, he added.

Rayburn L. Foster, Bartlesville, Okla., took up the argument for Frank Phillips, president of the Phillips Petroleum Co., who, he said, attended no meetings and if he knew about the program there was no evidence that he ordered participation of his company. While Arnott testified that he talked to Phillips, evidence showed that the conversation

(Continued on Page 22)

Further Cut by California Operators Agreed Upon

LOS ANGELES, Calif., Apr. 4.—April started off with a substantially lower crude production in California, reflecting primarily a 10-day production moratorium in the Lake View section of the Midway-Sunset field and more effective curtailment in the Wilmington field and elsewhere. In the former area, operators, to enhance curtailment, shut down all producing wells on April 1 and will not resume production activities until April 11.

Lake View production has been averaging around 17,000 bbls. daily for some time, and a 10-day production holiday will result in a reduction of about 170,000 bbls. monthly, or an average of approximately 5,700 bbls. per day. If no harmful results follow this initial moratorium, operators contemplate a similar production holiday each month in order to bring production down to their respective allowables.

Operators in the Wilmington field are considering a proposal to reduce maximum daily well production to 750 bbls., and it is likely this limitation will become effective before the close of the week. As a matter of fact, some wells have already been cut back below the maximum.

Due to cooperation of Ford Motor Co., General Petroleum Corp. has been permitted to curtail substantially production in the Ranger, Terminal and Ford zones, and this has permitted Union Pacific Railroad to do likewise, so there is no undue drainage. The original agreement between Ford Motor Co. and General Petroleum provided for a minimum production of 25 per cent of the aggregate potential production on the Ford property, but late in March, when conditions required further curtailment, the Ford interests authorized General Petroleum to reduce production to 15 per cent of the Terminal zone potential and 20 per cent of the Ranger and Ford zone potential production.

At present the Ford lease has a daily potential of 52,348 bbls. from 26 wells in three zones. In contrast with the new projected daily maximum production per well of 750 bbls., General Petroleum is at present producing only an average of 445 bbls. per well from the Terminal zone on the Ford lease. The Terminal zone is the most prolific of the three producing horizons at Wilmington and produces a crude oil testing around 27 degrees.

Carter Reduces Purchases In Parts of Oklahoma

The Carter Oil Co. will reduce its purchases of crude oil in Oklahoma 20 per cent effective April 10, according to announcement of J. J. Conry, president. The Tussy and Wildcat Jim areas in southern Oklahoma will not be included in the curtailment and in other areas where the per well average production of a lease is 10 bbls. or less daily the entire production will be taken.

President Conry said the company's market outlet had been reduced from month to month since fall until it now is about 50 per cent of normal. Failure of the industry to revive and the decreasing demand for crude necessitated the curtailment. The company owns 50 per cent of the production that will be affected by the reduction.

Petroleum Reserves Guarded By No Leasing Margin

Stringent regulations, protecting from private exploitation the nation's petroleum resources in Teapot dome, Wyoming; Elk Hills, California, and all other portions of the 70,000 acres of naval petroleum and military and naval helium reserves, have been announced by Secretary Ickes. Instructions have been given to Registers of the General Land Office to reject applications for oil and gas leases within 1 mile of the exterior boundaries of a naval petroleum or a military or naval helium reserve, as a protection from draining of the oil resources by private wells outside.

Slant Drilling Decision By California Court

LOS ANGELES, Calif.—The California Supreme Court has denied a hearing in four consolidated appeals, Alphonzo E. Bell Corp. against Bell View Oil Syndicate and others, and three associated cases, ruling that invasion of neighboring oil property through slant drilling constitutes trespass. The case now will be tried on its merits.

Nominations Being Received by Expo for "Grand Old Man"

H. R. Gruber, of Tulsa, vice president and oil country sales manager of the Union Wire Rope Corp., announces that nominations for "Grand Old Man of the Oil Industry" are being received by the Old Timers Committee of the International Petroleum Exposition and the person selected will be awarded a medal at the oil show in Tulsa May 14 to 21.

Any company or locality may nominate and sponsor a candidate for the "Grand Old Man" and nominations should be sent to the International Petroleum Exposition, Tulsa.

The program and ceremony have been arranged by the committee and a lasting memorial is to be unveiled during "Old Timers Day" at the May show.

The "Grand Old Man" selected at the 1936 Exposition was Martin H. Mosier, of Los Angeles; and W. J. Stewart was named "Grand Old Man of Tulsa."

"Nominees for 'Grand Old Man' must have been actively engaged in the oil industry for at least 50 years and have contributed to the development of the industry," said Mr. Gruber. Entry blanks may be obtained by addressing the International Petroleum Exposition, Tulsa.

I.P.A.A. Annual Meeting to Be Held in Tulsa in October

The ninth annual meeting of the Independent Petroleum Association of America will be held October 19, 20, and 21, Charles F. Roeser, president, announces. Tulsa, national headquarters, will be the host city.

At the annual meeting at Houston in October, 1937, a five-point program was adopted for Limitation of Imports, Limitation of Withdrawals From Storage, Correction by Congress of Inequities in Federal Tax Laws, Orderly Development of New Pools by Agreement, and Voluntary Agreement Within the Industry.

Pan American Starts 8,000-Foot Test in Southeastern Georgia

WAYCROSS, Ga., Apr. 4.—Governor E. D. Rivers of Georgia gave the "go" signal at spudding-in ceremonies for Pan American Production Co. No. 1 Adams-McCaskill, deep test, 2½ miles east of Offerman in Pierce County, southeastern Georgia, on Saturday, April 2.

He spoke to a large assemblage of Georgia business and civic leaders in a heavy downpour of rain, paying tribute to Georgia's natural resources.

No. 1 Adams-McCaskill will be the first deep test made in Georgia, the deepest previous well having been bottomed at 3,384 feet, according to the Georgia Department of Mines and Mining. Pan American expects to drill 8,000 feet. A 122-foot derrick was erected for the job.

The State Department of Mines and Mining estimates 2,000,000 acres of land have been leased in south Georgia by Pan American and other companies.

Richard W. Smith, assistant state geologist, points out that topographical conditions in the Coastal Plains area, of which Waycross is the center, indicate rock formations favorable to oil collection, and the structure is described as "the same as that in Louisiana and Texas where oil has been found in commercial quantities."

Governor Rivers was accompanied to the spudding-in ceremonies by R. F. Burch, commissioner of natural resources for the State of Georgia, and Capt. Garland Peyton, director of the Division of Mines, Mining and Geology.

Among the oil company officials on the speakers' stand were Robert E. Wilson of New York, president of Pan American and its subsidiaries; C. H. Wagner of Baltimore, general manager of the American Oil Co.; Robert E. Hitch of Savannah, general counsel for the company; E. R. Turner of Houston, manager of the Pan American Production Co.; W. A. O'Day of Baltimore, assistant sales manager for the American Oil Co.; John Better of Houston, chief geologist for the Pan American Production Co.; F. O. Sallee of Atlanta, manager of the Georgia division of the American Oil Co.; Henry T. Hulin of Savannah, manager of the Mexican Petroleum Corp.; E. V. Hewitt of Houston, assistant general superintendent of the Pan American Production Co.; F. W. Rade of Atlanta, assistant manager of the Georgia division of the American Oil Co.

Ruling on Elk Hills Title To Be Taken to Court

WASHINGTON, D. C.—Commissioner F. W. Johnson of the general land office ruled Elk Hills, California, titles invalid, holding the fields were known to be mineral lands prior to their release from the public domain in 1903. He denied claims in section 16 of the state of California, General Petroleum Co., Thomas A. O'Donnell, Homer I. Tipman and Potter Oil Co. The claimants have 30 days to appeal to the courts.

A similar ruling on section 36 was upheld by a federal district court and is on appeal to the ninth circuit court of appeals.

Less Than Half of Tracts Sold At the Osage Lease Sale

Only 49 of the 94 tracts offered at the Osage Indian lease sale in Pawhuska, Okla., last week were sold, successful bidders paying a total bonus of $10,250. Carter Oil Co. paid top price for SE section 1-24-6, on a bid of $2,200. The tract is between the South Burbank and Naval Reserve pools. Minimum bids fixed before the sale were $100 for east side tracts and $200 for west side tracts. Many oil men were prevented from attending by heavy rains and swollen streams.

Saskatchewan Plans Control Of Producers and Gasoline

REGINA, Saskatchewan.—The Saskatchewan government has introduced measures to provide for licensing of petroleum producers and to govern the imposition and collection of a gasoline tax of 7 cents per gallon. Provision is also made for a special grade of tax free gasoline for agricultural purposes.

Deepest Well Bottomed at 15,010 Feet; Will Test Upper Sand

LOS ANGELES, Calif., Apr. 4.—Continental Oil is making preparations to run in a steel liner in Wasco, California, wildcat to make a production test of a possible 50 feet of oil sand below 13,100 feet. The hole is bottomed at 15,010 feet and will be abandoned at that depth if proposed test is unproductive. The ditch has been showing oil and gas for past two weeks but the company officials are not very sanguine about the prospects. The interval to be tested was not cored and consequently drillers could not be certain about how much oil sand was present. Seven-inch casing was landed some time ago during drilling operations at 11,573 feet.

Rumex Oil Products, Ltd.

Rumex Oil Products, Ltd., is a recently established London company, fully paid capital, £10,000. The directorate is composed of Sir Thomas G. Jones, K.B.E., H. M. Ommanney, J. Popper, and W. Brauer. The objects of the company are purchase and sale of crude oil and petroleum products, to act as brokers for negotiating chartering of tankers (cargo and parcel lots), and insurance business. Those associated with the company have had wide experience in world petroleum marketing.

Lance Creek Lease Sale

WASHINGTON, D. C.—The General Land Office has announced a public auction of leases on 120 acres in Lance Creek field near Lusk, Niobrara County, Wyoming, May 16, at its Cheyenne office.

Texas Hearing April 18

The Texas Railroad Commission has set April 18 for its next hearing.

The OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Positive Program

There are but two ways of curing an overproduction situation such as exists in the oil industry today.

One way is to curtail output in line with demand. The other is to expand consumptive outlets so that they absorb a larger part of the available supply.

The former is in the nature of an emergency or last resort remedy, while the latter gives a base for permanent stability and expansion in a progressive industry.

The oil industry has been centering its activities on reducing supply to balance with a demand which has been flattening out. The results have been successful in that they prevented developments which no one wanted.

The industry during the remainder of the year will have the opportunity of supplementing this somewhat negative policy with a positive stand by devising means to increase the demand for its products.

On this positive side a great deal can be done within the next few months to increase sales of motor fuel and motor oils. Despite the fact that new car sales so far this year have been less than last year the carry-over from previous years means that there are now more cars registered than ever before.

That their owners are still operating them is demonstrated by the fact that a national survey completed this week shows that gasoline consumption in January was the greatest on record for that month, in all but four states. For the country as a whole the gain was more than 6 per cent.

These same car owners can be easily persuaded to increase greatly their use of gasoline through the spring, summer and fall months. There are more attractions for the motorist today than ever before.

The federal government and the states spent nearly a billion dollars in the past year on the construction and improvement of highways. This is in addition to the millions spent for the construction of bridges and other facilities for the use of motor travel.

The car owner today can go farther and in all directions over improved highways. Many of these new highways connect with parks and pleasure centers on which the governmental units have spent still more millions in making them attractive to the motoring public.

The job of the oil industry is to tell the car owners where these new highways and points of interest are, how they can get there with the least effort and the maximum pleasure.

Any gain over the usual seasonal increase in consumption will be of great value at this time.

Possibly even more important than the vacation period is the opportunity offered by the five-day week. Millions of car owners are now in position to take a hundred to five-hundred-mile trip over the week-end if they are informed of places worth going to and attractive routes. In the aggregate these week-end trips spread through the motoring season would far outweigh in consumption the peak of vacation travel.

A one per cent increase in terms of crude oil demand means an outlet for 34,000 additional barrels daily. Every gain of one per cent over last year in motor fuel and motor oil consumption adds $35,000,000 to the gross revenue of the oil industry in this country.

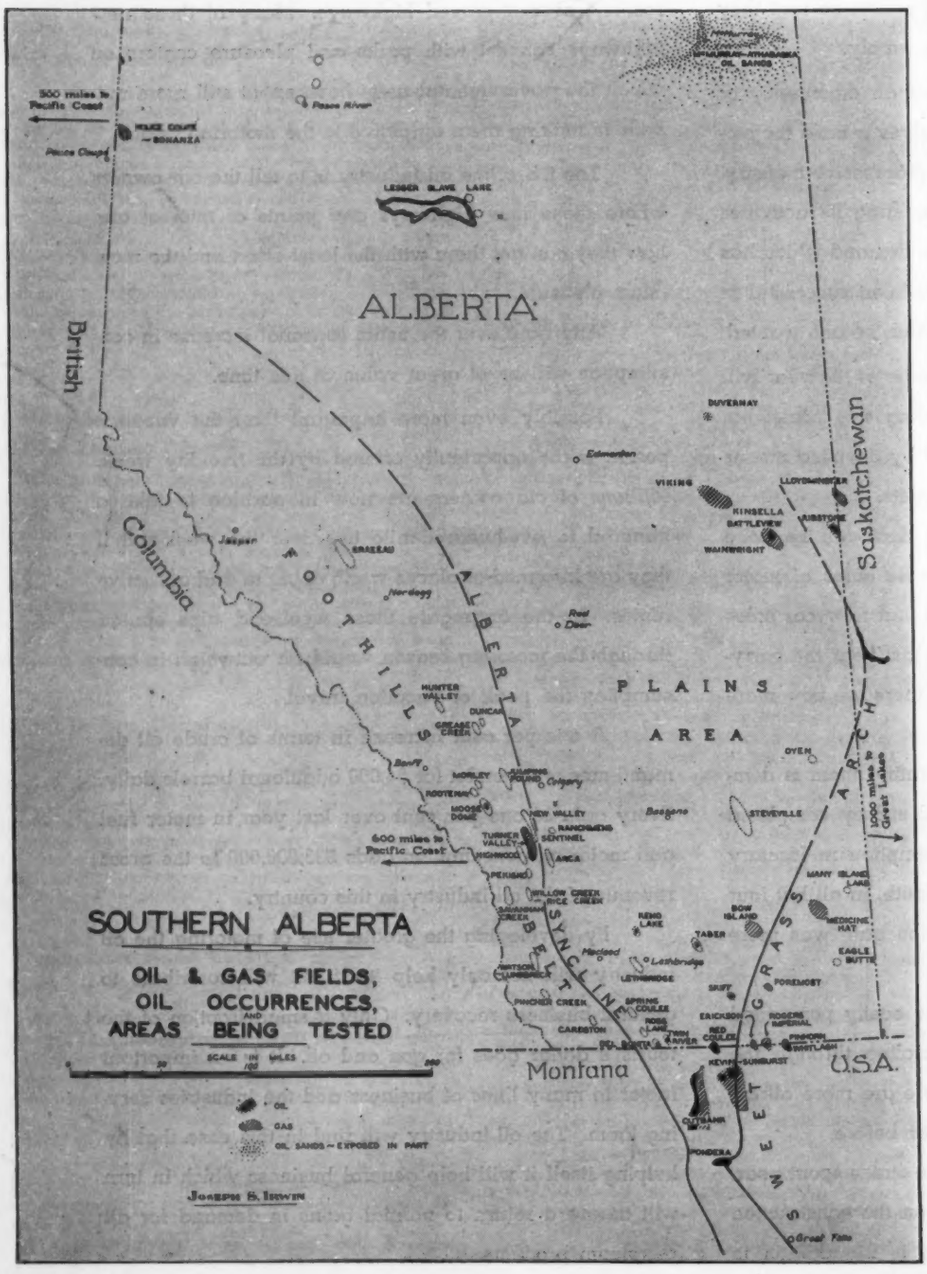
By developing the greater use of motoring the oil industry will not only help itself but will contribute to general business recovery. Only a small fraction of the tourist's dollar goes for gas and oil. It is an important factor to many lines of business and the industries serving them. The oil industry will find in this case that by helping itself it will help general business which in turn will assure a return to normal gains in demand for all petroleum products.

Western Canada Possibilities Being Developed Slowly

By JOSEPH S. IRWIN
Consulting Geologist, Calgary, Alberta

Discovery and development of oil, as well as other natural resources, has been slow in western Canada because it is a frontier country of great area and comparatively small population. The region has been less thoroughly prospected for oil than had the western interior portion of the United States 15 or 20 years ago.

The slowness of development is exemplified by experience in the Turner Valley field. Oil was discovered in sandstone members of the Blairmore (Dakota) formation of Cretaceous age in 1914, by drilling which was prompted by a gas "seep" or vent. Ten years later naphtha-laden gas was discovered in the deeper lying Paleozoic limestone. Not until 1936, 22 years after original discovery, was the existence of crude oil below the gas in the Paleozoic limestone generally realized. Even now, 24 years after discovery, the extent of the field has not been determined.



Oil and natural gasoline production in Canada during 1937 amounted to approximately 3,000,000 bbls. Although by world standards of comparison this is a small figure, it represented a gain of 100 per cent over annual production figures for the previous two years and more than 100 per cent over all other years. Canada's 1937 oil production was, therefore, epochal and the cause of the great increase is interesting to consider.

Since approximately 95 per cent of the oil and natural gasoline produced in Canada comes from Turner Valley field of Alberta the sudden doubling of oil production is to be attributed to the development in Turner Valley of a crude oil field of major rank (105,000,000 to 140,000,000 bbls. estimated producible oil in as yet undefined productive area) after the field had been known for 12 years as a wet gas field and the gas reserve was two-thirds depleted. Recent successful development therefore suggests the possibility that Canada may ultimately supply not only her own petroleum requirements, but may make strategically and economically important contribution to the requirements of the British Empire.

The unique geology and oil and gas occurrence in the Turner Valley field together with other oil and gas occurrences and possibilities in western Canada will be briefly sketched.

Regional Geology

From west to east the structural provinces of western Canada which are of interest because of oil and gas possibilities are:

1. A foothills belt, 20 to 50 miles wide, extending from the Montana boundary northwestward along the Rocky Mountain front for 1,000 miles through southwestern Alberta and northeastern British Columbia. (See map.) In this belt the Cretaceous and underlying Jurassic and Paleozoic strata are intensely folded and thrust faulted. The Turner Valley structure is included in this foothills province.

2. Eastward from the foothills belt the strata descend rather abruptly, that is some 3,000 feet in 3 to 4 miles, into a structural trough known as the Alberta syncline. This is distinctly a structural, not topographic depression. It extends northwestward from central Montana to Yukon Territory.

3. Eastward for 150 miles from the Alberta syncline the strata rise some 5,000 feet (average dip 33 feet per mile) onto the crest of a very broad, low arch in eastern Alberta. This arch is the northern extension of the Sweetgrass arch, well known for the prolific Kevin-Sunburst, Pondera, and Cut Bank oil and gas fields which have been developed on it in Montana, and for the profitable Bow Island, Medicine Hat, and Viking gas fields and other smaller oil and gas fields and prospects on it in Alberta.

4. Eastward from the Sweetgrass arch the strata again descend at extremely low inclination, measured by but a few feet per mile, to central Saskatchewan, whence they again rise on the flank of the low pre-Cambrian igneous and metamorphic rock mass in eastern Manitoba. The broad, gentle syncline or basin structure underlying the plains of Saskatchewan and Manitoba

Turner Valley field viewed from southeast. Recently discovered crude oil area lies at left

extends 600 miles eastward from the east edge of the map. It is sometimes called the Moose Jaw syncline.

So little oil exploration and development has been conducted in the Moose Jaw syncline that its oil and gas possibilities are little known. Some structure of type favorable to oil and gas occurrence is known, the possible existence of stratigraphic oil traps is suggested, and the same formations which yield oil and gas in adjacent regions occur. Oil and gas discoveries may therefore be expected.

Oil Possibilities

Minor folds and stratigraphic traps which cause the localization of oil and gas into pools occur throughout the three structural provinces described, covering an area of 750,000 square miles. Only the southwestern portion of this area of possibilities is shown on the map.

In this area only the oil and gas fields, oil and gas occurrences, and the better known areas now being tested are shown. Other known oil and gas prospects are not shown, and many now unknown will doubtless be disclosed by prospecting and development. That this region was to be expected to produce oil and gas is indicated by the fact that the same formations and same type of structural features which account for oil and gas fields in New Mexico, Colorado, Wyoming, and Montana, occur in the Canadian area. That the region does produce oil and gas in significant quantity is attested by the commercial fields themselves.

The productive formations extend downward from those of Upper Cretaceous age through Lower Cretaceous, Jurassic, Mississippian, and Devonian ages. Permian, Triassic, Pennsylvanian, Silurian, and Ordovician rocks are absent in all areas thus far drilled.

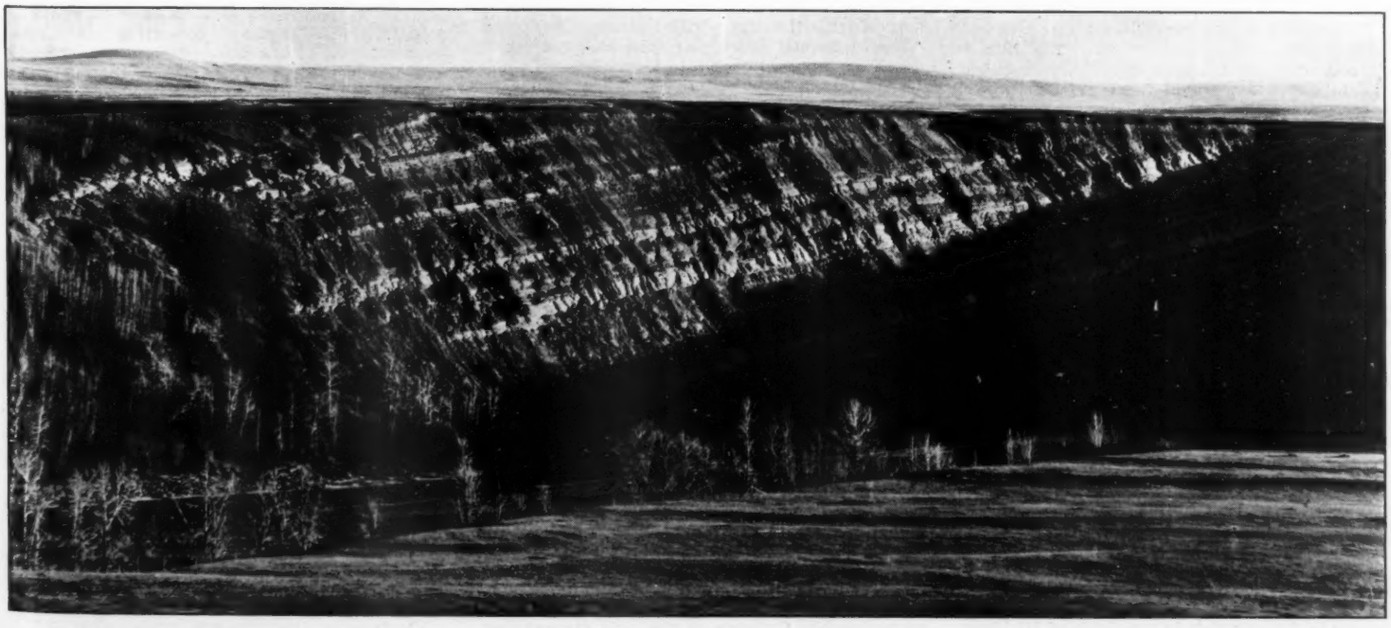
Principal oil and gas production in western Canada is now derived from Rundle (Madison) limestone of Mississippian age. It is generally referred to by the noncommittal term "Paleozoic limestone." This limestone is the most important oil reservoir in the adjacent Kevin-Sunburst field of Montana, and rocks of the same age are well known sources of oil in Mid-Continent fields of the United States.

Oil in Cretaceous

Sandstone members of Cretaceous age yield profitable amounts of oil and gas in western Canada as they do in the Rocky Mountain region of the United States. These sands lie above the Jurassic and Mississippian strata.

Athabaska-McMurray Oil Sands (Cretaceous)

Exposed along Athabaska River and its tributaries near McMurray, 250 miles northeast of Edmonton, is probably the greatest single known oil reserve in the world. Estimates by Max W. Ball place the oil content of this sand body of Lower Cretaceous age at 100,000,000,000 to 500,000,000,000 bbls. Ball, however, states that "in all probability only 1,000,000,000 bbls. are accessible to development at present day prices. The reason for this is that the oil is heavy, thick, contains little or



LOOKING SOUTH—*Eastward dipping strata on east flank of Turner Valley anticline at south end of field on Highwood River*

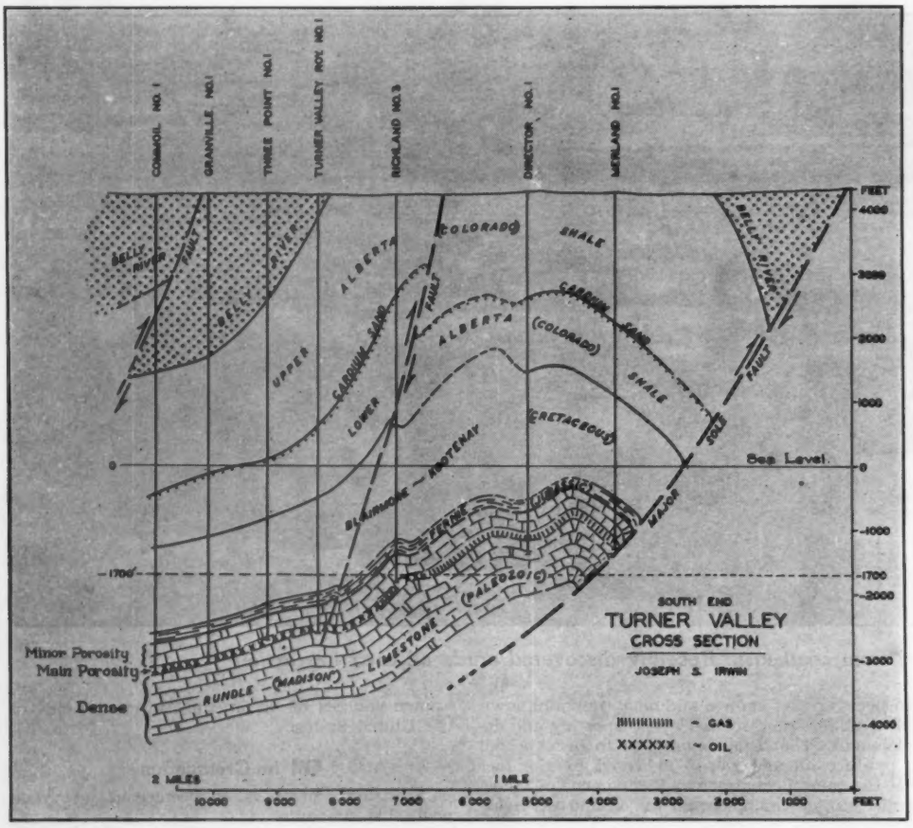


Fig. 1

no gas, is not under appreciable pressure, and can not be recovered by drilling wells into it. It must therefore be mined. The oil is not, however, a residual oil, but is, rather, virgin oil which has not been subjected to the natural refining processes of heat and pressure. By cracking processes it will yield 20 to 35 per cent gasoline.

Ball states, "It appears that saturated sands underlie at least 10,000, probably 20,000, and possibly 30,000 square miles or more," and he estimates an oil content of 13,000 bbls. per acre.

According to S. C. Ells of the Department of Mines, Canada, 750,000,000 tons of oil sand with an estimated oil content of 500,000,000 bbls. are accessible to open-cut mining methods.

Mining and processing methods have now been devised, but these, together with the item of transportation costs have apparently not been able to compete with oil from wells at present prices. When demand requires and consequent prices permit, however, this vast quantity of oil will gradually become available. Meanwhile it constitutes a comforting and impressive backlog to prospective Canadian and Empire self-sufficiency in oil.

Oil in Devonian

Below the Mississippian limestone occur limestones and shales of Devonian age which attach importance, and will give impetus to drilling because of recent discovery of potentially commercial oil production in them on Moose dome, 60 miles west of Calgary at depths between 1,500 and 2,800 feet. Moose dome oil has a gravity of 44.5 degrees to 47 degrees A.P.I., sulfur 1.12 per cent, and gasoline content by distillation 64.9 per cent.

Oil in paying quantity at 800 feet in shales of Devonian age at Fort Norman, 1,200 miles northwest of Moose dome, demonstrates the wide extent and petroliferous character of Devonian strata.

Devonian rocks yield important amounts of oil in Mid-Continent and eastern regions of the United States and are at present the principal source of oil production in the fields of Michigan.

The Turner Valley field, which caused 100 per cent increase in Canada's oil production for the year 1937, possesses a number of extraordinary features which will be of general interest.

The geologic structure of the Turner Valley field is unique among oil fields of the world. The orthodox type of anticlinal structure on which oil and gas are prone to accummulate has been torn loose from its position of original development and pushed eastward and upward many thousands of feet so that the productive limestone core of the anticline now rests, at depths of 6,000 feet and greater, on Alberta shale, Belly River sandstones, and still younger formations which in normal position lie thousands of feet above the limestone. This is known from the records of several wells that have drilled through the formations in normal order and then at considerable depth have passed back into formations previously penetrated, or even into formations which lie above those in which the wells started. Breaks of this nature in the earth's crust are called thrust faults. Figure 1 is a vertical section across the south end of the Turner Valley field showing the structure as determined by plotting to scale the formations penetrated in various wells. The principal and deepest known surface along which the overlying earth mass moved up and over the underlying mass is called the "major, sole fault." Other minor thrust faults in the upthrown, overriding mass are also revealed by the well records. The paths of the faults are determined by connecting their points of emergence at the surface, if discernible, with the points of penetration in the various wells. The westward and downward extension of the major sole fault is not shown because it has not been penetrated in the southwestern portion of the field. The formations under the sole fault are not shown for the same reason, but where they have been penetrated beneath the sole fault farther to the north, they have been found to be overturned, folded, and highly disturbed. Immediately east of the surface outcrop of the sole fault the strata dip eastward at angles of 30 to 45 degrees, but this dip diminishes rapidly eastward and within 4 miles the strata are approximately flatlying at the axis (trough) of the Alberta syncline.

Another remarkable feature of the Turner Valley field, one which is perhaps a world record, is that the buried anticlinal mass of limestone is continuously productive from its highest peak 787 feet above sea level near Turner Valley village in the northern portion of the field to the bottom of Sunset well, 3,393 feet below sea level. Thus the field has at this time a productive height or closure, free from water, of 4,180 feet. The lower limit of productivity, as well as the north, south, and west limits of the productive area have not yet been determined. The eastern boundary of production is formed where the limestone body abuts against the sole fault.

The Turner Valley oil and gas field, as thus far developed, is 14 miles long and has an average width of a little more than 1 mile. The naphtha-gas producing area comprises approximately 10,000 acres. The crude oil area on the west flank of the structure below the gas is now three-fourths mile wide in the south end of the field. If it is assumed that this width will continue throughout the length of the field along the west flank of the structure, as the known geological data indicate that it should, a crude oil area of 7,000 acres is thus far presumptively indicated.

One well, No. 8 Dalhousie, failed to find oil in paying quantity in the Paleozoic limestone in the central portion of the west flank and was abandoned. On the other hand, Advance well No. 5-A in the central west flank area, and Model wells No. 1 and No. 2, in the north end of the west flank, although originally gas-naphtha producers, gradually changed to crude oil producers and have yielded the latter product for a number of years. Presence of crude oil along the entire length of the west flank is indicated.

Producible Oil

J. G. Spratt, geologist and engineer of the provincial Department of Lands and Mines, estimates the reservoir capacity of the crude oil area to be 100,000 bbls. per acre and the oil content to be 50,000 bbls. per acre. The ultimate yield per acre will depend primarily upon the well spacing factor or, stated otherwise, upon the number of wells drilled. Most of the wells are now so spaced that one well to 10 acres would ultimately result, but of late there is a tendency to wider spacing which will no doubt be increasingly followed because of great cost of wells. Probably the ultimate average will be not more than one well to 20 acres.

Spratt has noted that the present production rate of wells is 50,000 bbls. per 100-pound pressure drop. Assuming the same production rate for 1,000 pounds pressure drop from the present approximate average, 1,500 pounds, the production per well down to 500 pounds would be 500,000 bbls. This production might be attainable provided only one well to 40 acres or one well to 20 acres be drilled. If the oil content is 50,000 bbls. per acre, then on the above basis one well to 40 acres would recover 25 per cent of the oil in the reservoir. One well to 20 acres would recover 50 per cent of the oil. The ultimate oil recovery will probably be between these limits. At 30 per cent recovery the producible oil per acre would amount to 15,000 bbls.

On the basis of 15,000 bbls. per acre, producible oil in the 7,000 acres of presumptively proven crude oil area would be 105,000,000 bbls. Should closer well spacing than an average of one well to 40 acres, combined with efficient methods of production permit the recovery factor to reach 40 per cent the recovery per acre would be 20,000 bbls. and total recovery from 7,000 acres would be 140,000,000 bbls.

Crude Oil Area

The average pressure in the developed crude oil area is 1,500 pounds per square inch, maximum pressure is 2,380 pounds and minimum is 700 pounds per square inch.

Gas-oil ratio is 1,000 feet per barrel of oil.

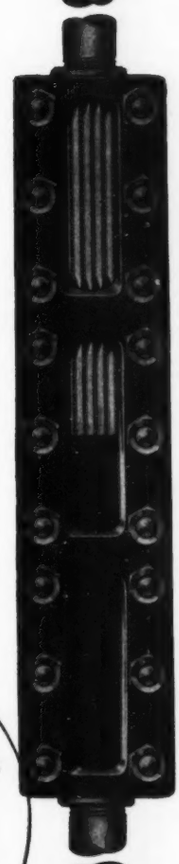
Two thousand acres are now fully proven for crude oil.

Thirty-five oil wells (December 31, 1937) yielded 27,524 bbls. per day, or 787 bbls. average per well.

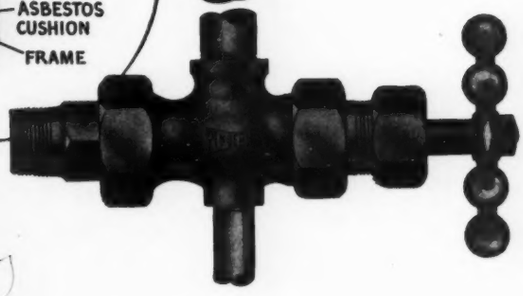
Ninety-seven naphtha-gas wells yield 2,500 bbls. of naphtha per day or 26 bbls. average per

PENBERTHY
Reflex Gages
(Licensed under Jerguson Patent)

have many refinery and natural gasoline plant applications

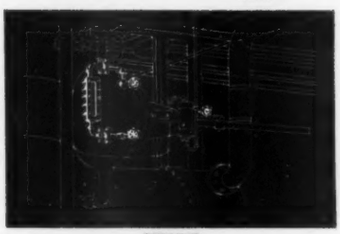


MULTIPLE TYPE EQUIPPED WITH DROP FORGED STEEL GAGE VALVES



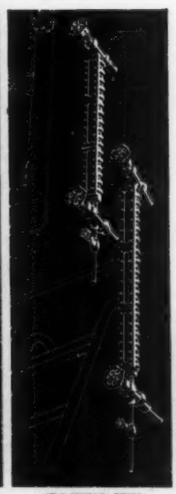
VAPOR RECOVERY

ACCUMULATOR TANK

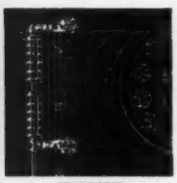


REBOILER

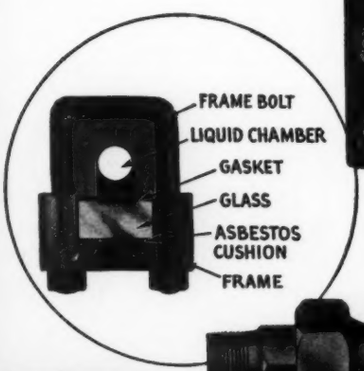
VAPOR SEPARATOR



CRACKING STILL



STABILIZER



● The sketches show only a few of the many important applications for Penberthy Reflex Gages in oil refineries and natural gasoline plants. As a matter of fact, Penberthy Reflex Gages are preferred wherever a liquid level must be easily and positively visible . . . when that liquid is under pressure or at high temperature (or both).

Penberthy Reflex Gages are of exceptionally rugged construction; they are made in any length desired and for various kinds of liquids. We shall be glad to quote upon your requirements.

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Automatic Injector

Ejector, Syphon or Jet Pump

"Navy Type" Liquid Level Gage

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Gas Engine Lubricator

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Plain Compression Grease Cup

Screw Plunger Grease Cup

Spring Compression Grease Cup

Automatic Electric Sump Pump

Automatic Cellar Drainer (Water or Steam Operated)

Dipless Air Cock

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well. Gas-naphtha ratio is 35,000 feet per barrel.

Original pressure is estimated to have been 2,000 pounds per square inch. Original gas content is estimated to have been 1,500 billion feet of which 1,050 billion, 70 per cent, have now been produced. Original naphtha content is estimated by Spratt to have been 45,000,000 bbls. of which approximately 16,000,000 bbls., 36 per cent, have been produced. It is estimated that approximately 2,000,000 additional barrels of naphtha will be produced which would make the ultimate naphtha production 1,800 bbls. per acre and the naphtha recovery factor 40 per cent.

Field Drilling Record

To January 1, 1938, a total of 250 wells had been drilled on the Turner Valley structure, of which 144 were completed in the Paleozoic (Madison) limestone. Of the limestone wells, 108 were naphtha-gas producers and 36 were crude oil producers.

Twelve wells have been abandoned of which eleven are in the naphtha-gas area and one No. 8 Dalhousie, is in the crude oil area.

Drilling Methods, Depths, Costs

Most of the wells are drilled by rotary method, and require four to six months to complete. Depths in the crude oil area vary from 6,000 to 7,500 feet. Costs average approximately $150,000 per well.

Gravity

There is no barrier or line of demarcation between the naphtha-gas and crude oil areas. The gravity of the liquid product merely decreases regularly down structure, ranging from 75 degrees A.P.I. high on structure to 40 degrees A.P.I. in the structurally lower wells. A gravity of 60 degrees A.P.I. is arbitrarily taken as the division point between naphtha and crude oil. It is thought that the 60 degrees point was originally located at approximately 2,000 feet below sea level, but apparently it has migrated up structure in the more heavily depleted areas to approximately 1,700 feet below sea level. The 1,500-foot contour below sea level on the top of the Paleozoic limestone is the approximate boundary above which wells are likely to yield naphtha and below which they are likely to yield crude oil.

Price Schedule

The average price of Turner Valley crude oil is $1.25 per barrel. The base field price for oil of 40 to 40.9 degrees A.P.I. is $1.14. Increase is at the rate of 2 cents per degree to $1.62 for oil of 64 to 64.9 degrees A.P.I. The field price of naphtha, 65 degrees A.P.I. and higher is $2.14 per barrel.

Pipe line charges from Turner Valley to Calgary are 15 cents per barrel. Loading charge at Calgary is 5 cents per barrel.

DAILY POTENTIAL PRODUCTION OF TURNER VALLEY, JANUARY 1, 1938

	Bbls.
Crude oil, below 60 deg. A.P.I. from Paleozoic limestone	27,441
Naphtha above 60 deg. A.P.I. from Paleozoic limestone	2,500
Crude oil from Cretaceous sandstones	28
Total daily potential	29,969

Pipe Lines

Present pipe line capacity from Turner Valley to Calgary, 40 miles, is 13,500 bbls. per day. Pipe line construction now under way will increase the capacity to 24,000 bbls. per day.

Proration

Due to lack of pipe line capacity, wells of over 100 bbls. capacity served by the pipe lines are restricted to 42 per cent of potential production.

Acidization

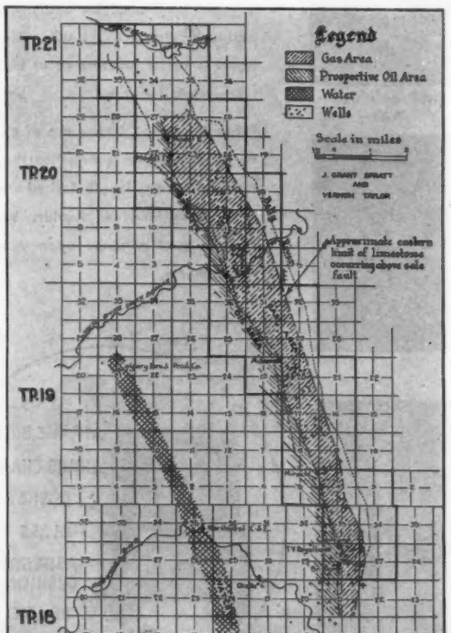
Acidization of Turner Valley limestone wells for the purpose of increasing production has been successful, but gas-oil ratios are generally increased. With proration in effect, acidizing is scarcely justifiable, but since the practice is in vogue, operators are forced to acidized in order to secure as high a potential as possible.

Acid treatments vary from 5,000 to 10,000 gallons. Most wells have been given two applications.

Thirty-three crude oil wells having a total daily production of 15,035 bbls. before acidization had a total daily average of 27,441 bbls., six months to a few days after acidization. This is an increase of 81 per cent. The oldest crude oil wells, eight in number, including two which were not increased by acidization, showed total increase from 3,364 bbls. before acidization to 6,224 bbls. total daily average, on a five-day government test, five months (average) after acidization. This increase is 82½ per cent. It is therefore evident that acidization increase holds up well.

National Aspects of Canadian Oil Situation

With a potential production of 30,000 bbls. per day and pipe line capacity soon enlarged to 24,000 bbls. per day by construction now under way, Alberta will shortly have oil in excess of the market of approximately 17,000 bbls. per day which it is possible to reach under existing price and freight schedules. The average consumption of oil in Canada in 1937 was approximately 108,000 bbls. per day. To provide for, reach, and



Turner Valley field and district

gain, the remaining Canadian market of some 90,000 bbls. per day in eastern Canada and on the western seaboard the following must occur:

1. Prices and freight rates must be adjusted to the lowest feasible figures in order to permit displacement of imported oil. In this the railroads find opportunity to render a great national service by helping to make Canada self sufficient in oil production, and they will at the same time be doing themselves a service by fostering the development of Canadian natural resources which will in turn mean more tonnage and more business. At the same time they will defer the construction of long competitive oil pipe lines.

In brief, the first result of domestic oil production would be the spending of $60,000,000 annually in Canada instead of abroad.

2. Present producible oil reserves now amounting to about three years' supply for Canada's present annual consumption of about 40,000,000 bbls., should be multiplied by a least four, and the present daily potential production of 30,000 bbls. should be multiplied by 10 or more in order to warrant long pipe lines to the Great Lakes and the Pacific, to permit efficient production, and to merit the patronage and confidence of the domestic and potential empire markets. Search for, and development of oil resources therefore must continue. Only a promising start has been made.

Madison Decision

(Continued from Page 15)

must have been before the February 11 meeting, Foster declared.

Deserves Medal

Argument on behalf of H. D. Frueauff, H. E. Brandli and O. J. Tuttle of the Cities Service Co. and its subsidiary, Empire Oil & Refining Co., was presented by Charles Gately, who contended Arnott had done a "wonderful job" in stabilizing.

"If I had it to do, I'd give him a medal of honor instead of handing him an indictment," Gately said.

No act by Frueauff even remotely connected with the case was done after the petroleum code period, he said, and Brandli, as an official of Cities Service Export Co., had no interest in Standard of Indiana territory, being concerned only with the need of gasoline for export. Tuttle, as Empire tankcar sales manager, had no voice in the company's policies and as a substitute on the tankcar subcommittee, there is no evidence that information of anything illegal was brought to his attention, Gately added. As a subordinate, Tuttle did only what he was ordered to do, with every reason to believe it was legal and proper, and he had no choice in the matter other than to carry out his orders, the attorney said.

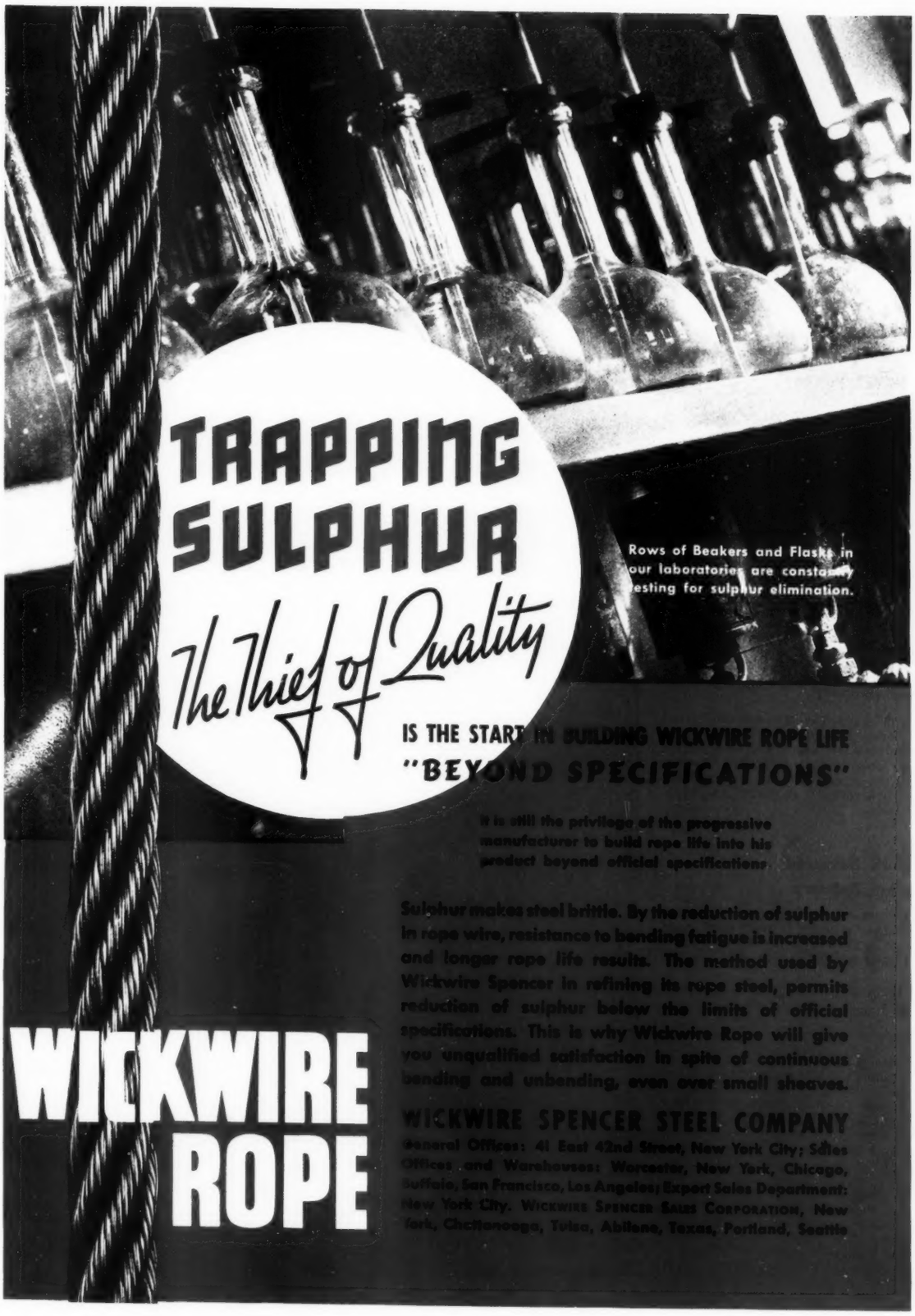
The striking characteristic of the entire case, said Goldthwaite Dorr, also of Socony-Vacuum counsel, was the change in the nature of the charge which the government finally sought to prove in contrast with that contained in the indictment.

The original charge, that the defendant companies bought distress gasoline at prices above the spot market and persuaded the journals to publish their prices, was an "ugly one," Dorr said, but this position was negatived by the evidenced and it finally appeared that the prices paid by the majors were in fact lower than those paid in sales of independent refiners to jobbers and consumers.

The Globe Oil & Refining Co. of Oklahoma made its choice of independents from which it purchased gasoline before the government claims "dancing partners" were drawn for the "economic ball," said Attorney Ralph Horween, who recalled that Globe was compelled to purchase large quantities of gasoline after its plant at Blackwell closed temporarily in early 1935. Horween appeared not only for the three Globe companies but for their president, I. A. O'Shaughnessy, and A. V. Bourque, secretary, Western Petroleum Refiners Association.

The actions of Bourque, who is not connected with any company and sells no gasoline, do not indicate any part in a price-fixing conspiracy, the attorney argued. As a representative of small independents, Bourque was "breaking his neck" to help find them outlets for their gasoline, Horween said, and his only connection with the buying program was in furnishing surveys of current surplus supplies to the mechanical subcommittee. He was not a member of the committee which contacted buyers and had nothing to do with the prices discussed. Judge Stone made note of the fact that Bourque neither bought nor sold gasoline and that as secretary of the association he took his orders from President Clyde M. Boggs, who already has been dismissed from the case.

The closing argument was delivered by Attorney Frederick Wood, who claimed a detailed analysis of the evidence showed it insufficient to justify an inference that J. W. Carnes, vice president of the Sinclair Refining Co., knew of the existence of any illegal program. Carnes prepared a list of possible purchasers in East Texas at a meeting held in New York, but testimony of the government's witness, Neil Buckley, showed no agreement was reached at that meeting, "nobody agreed to take a gallon of gasoline and the proposal ended right there," Wood said.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Sulphur makes steel brittle. By the reduction of sulphur in rope wire, resistance to bending fatigue is increased and longer rope life results. The method used by Wickwire Spencer in refining its rope steel, permits reduction of sulphur below the limits of official specifications. This is why Wickwire Rope will give you unqualified satisfaction in spite of continuous bending and unbending, even over small sheaves.
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Rows of Beakers and Flasks in our laboratories are constantly testing for sulphur elimination.

Refinery Expansion

Pacific Gas Files Application to Erect Power Plant at Oleum

NEW YORK.—Pacific Gas & Electric Co. announced here last week that it had filed an application with the California Railroad Commission for permission to construct a $5,000,000 plant to serve the Union Oil Co. refinery at Oleum, Calif. During 1937 Union completed a modernization and enlargement program at Oleum, including boosting of the plant's crude capacity from 17,000 to 20,000 bbls. daily and installation of a 12,000-bbl. cracking unit.

Ohio Oil Refinery Processing Output of Dry Creek Field

The Dry Creek field, in Carbon County, Montana, which is operated by the Ohio Oil Co., produced approximately 35,000 bbls. in February, according to the State Oil Conservation Board, of which 27,787 bbls. were refined in Montana. This was approximately one-third of the total runs in 1937.

In the fall of 1937 the Ohio company completed a 2,500-bbl. refinery at Lovell, Wyo., to take care of the company's production in the nearby Garland field and create a market for the oil. The principal production from the plant is asphalts, and road and fuel oils. The gasoline tops are disposed to the Independent Refining Co. at Laurel and other products to the Midwest Oil Co., of Minneapolis. The Garland crude is a low gravity black oil, but with high antiknock values, while the Dry Creek crude is a high gravity oil with low antiknock values. It is reported that the Independent refinery has developed an excellent grade of gasoline by blending the tops recovered from the Garland crude with the oil it is buying from Dry Creek.

Misko Takes Over Operation Of Mirando City Refinery

CORPUS CHRISTI, Tex.—The Mirando City refinery of Misko Refineries, Inc., under lease to Amsco Refining Co. for the past few years, has been turned back to its owners according to Kent W. Bartlett, president of Amsco. The plant at present is shut down. Amsco's new 10,000-bbl. refinery at Corpus Christi is now in regular operation.

Construction Work Resumed On New Canadian Refinery

RED DEER, Alberta.—Construction has been resumed at the Hydro-Pete refinery at West Park, near Red Deer. The plant, with a capacity of 250 bbls. a day, will be placed in operation this month.

Anglo-Canadian Leases Manitoba Refinery

CALGARY, Alberta.—Anglo-Canadian Oil Co. of Calgary has leased the Central refinery, now under construction at Brandon, Manitoba, on a basis of $2,500 annual rental, profits to be divided equally between the producing and refining companies. Capacity of the plant will be increased from 700 to 1,000 bbls. by April 15 when the Anglo-Canadian company takes over, and later to 1,800 bbls. Turner Valley crude will be handled.

Shareholders of Anglo-Canadian Development & Holding Co. recently authorized the changing of the company's name to Anglo-Canadian Oil Co. and elected the following directors: H. R. Milner, W. S. Campbell, Edmonton; Charles C. Ross, F. P. Byrne, W. G. Egbert and H. A. Howard, Calgary.

Erection of Three French Refineries Planned

NEW YORK.—The liquid fuel office of France (Service des Combustibles Liquides) is reported planning to build three plants for the manufacture of synthetic gasoline. It is reported that the annual capacity of each plant will be 60,000 metric tons, about 500,000 bbls., and that coal deposits at Gardanne (Bouches-du-Rhine) and Decazsville (Aveyron) and the lignite deposits in the Landes will be utilized. Plans call for using a different hydrogenation process in each plant. The Bethume and the Lievin processes will be used and the third process will be a modification of that under the Hydro patents, if the negotiations now pending are carried through successfully.

Wilshire to Add Reforming Unit and Crude Heater

CHICAGO.—Wilshire Oil Co., Inc., of Los Angeles has announced its decision to install a Dubbs reforming unit with a rated capacity of 4,000 bbls. of naphtha a day. The unit will be operated under license from Universal Oil Products Co. At the same time, Wilshire will add a crude heater to its existing Dubbs simultaneous skimming and cracking unit, designed to handle 18,000 bbls. of crude a day. The addition of this heater will enable the topping and reforming sections to be operated independently of the cracking unit. Construction is starting at once.

The operations of the new reforming unit and crude heater will mesh with those of the combination two-coil selective cracking unit and the U.O.P. catalytic polymerization unit previously installed. The three processes will work together to increase the overall capacity of the refinery and raise still further the average octane number of the several grades of gasoline produced. When topping 18,000 bbls. a day, about 2,000 bbls. of straightrun gasoline of 250 endpoint is produced, 4,000 bbls. of naphtha of 450-470 endpoint and 12,000 bbls. of topped crude for the cracking unit. The naphtha will be charged to the new reforming unit.

Operations Resumed in Bay Refinery at McPherson

McPHERSON, Kans.—Bay Petroleum Corp. refinery here was placed in operation last week following a five-month shutdown to repair damage caused by fire last December. The plant has a crude capacity of 3,000 bbls. daily, having been enlarged to its present capacity after Bay purchased the plant from Dickey Refining Co. in June, 1937.

Pipe Line Activity

Ewing Galloway, N. Y.

Laying pipe line in Panuco, Mexico

Continental Begins Work On Its Louisiana Line

Continental Oil Co. has started construction work on its 6-inch pipe line from Ville Platte to Tepetate in Evangeline Parish, Southeast Louisiana, for which the survey was recently completed. The new line will have a daily capacity of 12,000 bbls.

Completion of the line will connect Ville Platte production with Continental's Louisiana system at Tepetate and link it to the company's deep-water terminal at Lake Charles. The company is also constructing 35 miles of telephone line connecting Ville Platte, Tepetate, and its Basile loading station. Completion of the project is scheduled for April 25.

Old Ocean Line Ready For Operation April 15

HOUSTON, Tex.—The Old Ocean oil field near Sweeney, Brazoria County, will have pipe-line outlet by April 15, according to plans of Texas Co., which is laying the line.

The new line will extend from West Columbia to the Old Ocean field, a distance of 9 miles. It will be 4-inch. Williams Brothers of Tulsa have the contract.

Natural Gas News

Texas Gas Production and Gasoline Recovery

AUSTIN, Tex.—Texas gas wells produced 2,015,535,000 feet of dry natural gas daily in February, a minute reduction from January production.

The railroad commission reported that although processing dropped 7,500,000 feet daily, gasoline recovery rose approximately 200,000 gallons because plants used larger proportion of casinghead gas, richer in gasoline content.

Carbon black plants produced 1,207,842 pounds daily.

Columbus Ohio, Federal Jury Indicts Gas Men

COLUMBUS, Ohio.—Fifteen officials of Ohio Fuel Gas Co. and its parent, Columbia Gas & Electric Corp. of New York, were indicted by the Franklin County grand jury as a development of a $42,000,000 suit brought against the company by John L. Davis, September 18. The suit charged the company with conspiracy to defraud 700,000 Ohio gas consumers, including about 80,000 in Columbus by pumping unburnable, inert gas into its mains and selling it as natural gas. The suit covered the nine years from 1929 to 1937.

Pacific Coast Gas Association Announces Two Meetings

The Pacific Coast Gas Association will hold its Northwest conference June 16 and 17, at Portland, Ore., and its annual convention September 14, 15 and 16, at Santa Barbara, Calif.

Production and Transmission Feature Gas Convention

The dramatic picture of America's natural gas service, from producing sand to consumer's equipment, will be unfolded in New Orleans, La., May 9-12, 1938, at the annual convention of the Natural Gas Department of the American Gas Association. Four interest-packed days await delegates and visitors from the entire continent.

Interesting general sessions, with nationally prominent speakers, will be presided over by Robert W. Hendee, chairman of the Natural Gas Department, and by Thomas R. Weymouth, New York City, vice chairman of the department.

On the general sessions program, in addition to an address by Mr. Hendee, general manager, Colorado Interstate Gas Co., on "The Future of Natural Gas," will be addresses by N. C. McGowen of Shreveport, La., president of the American Gas Association; Merrill N. Davis of Bradford, Pa., president of the Association of Gas Appliance and Equipment Manufacturers, and J. D. Creveling, of New York, who will speak on "Natural Gas at the New York World's Fair." Addresses will be given also by Alexander Mahood, president of the National Association of Railroad and Utility Commissioners, Charleston, W. Va., and Cecil F. Elmes, of Sanderson and Porter, New York.

Of particular interest to the oil and gas fraternity will be the various programs of the production section, whose chairman is W. Jennings Young, vice president of the Oklahoma Natural Gas Co., Tulsa.

Authorities will deliver papers on many phases of gas production and conservation. Some of the subjects and speakers are: "What the Oil Industry Is Doing About Conservation," by Hugh M. Stalcup, vice president of Skelly Oil Co., Tulsa; "The Problems of Conservation" by L. B. Denning, president, Lone Star Gas Co., Dallas, Tex.; "Properties of Fluids Under High Pressure Reservoirs Producing Small Amounts of High Gravity Liquid," by Kenneth Eilerts, U. S. Bureau of Mines, Bartlesville, Okla. and "Latest Ideas on Availability of Gas Reserves and Well Spacing," D. T. MacRoberts, United Gas Pipe Line Co., Houston, Tex.

Other subjects and speakers are "Utilization of Natural Gas From Oil Field Operations in California," by H. P. George, Southern California Gas Co., Los Angeles, Calif.; "Acidizing Gas Wells and Shooting to Increase Production," by M. E. Chapman, Tulsa, with discussion by Robert Garrett, Arkansas Natural Gas Co., Shreveport, La.; "Pooling of Royalty Interests Under Gas Producing Areas," by J. French Robinson, Peoples Natural Gas Co., Pittsburgh, Pa., and many other timely and interesting subjects, some being presented for the first time.

Research and technical problems will be presented by the main technical and research committee, under the chairmanship of H. C. Cooper, of Pittsburgh, Pa. Subcommittee reports will be submitted, bringing delegates up to date on a variety of subjects.

Many new developments in transmission will be completely covered by executives and experts at a session under the chairmanship of A. L. Forbes, Jr., of El Paso, Tex. T. S. Bacon, Lone Star Gas Co., Dallas, will present a paper on "Combination Dehydration and Desulfurization"; W. M. Deaton, Bureau of Mines, Bartlesville, Okla., will speak on "Recent Developments in Gas Hydrate Study and Dew Point Apparatus"; and "Recent Improvements in Electric Welding on Pipe Lines" will be the subject of Hal Price, of H. C. Price, Inc., Bartlesville, Okla. R. J. Kuhn, New Orleans, La., will present "Practical Application of Cathodic Protection," and William Moeller, Jr., of Southern California Gas Co., will talk on "Main Line Drips." A motion picture will show the laying of a submarine gas pipe line across San Diego Bay, California.

Sanderson Leads Pressure Piping Advisory Committee

A. D. Sanderson, of Standard Oil Development Co., has been appointed chairman of the Advisory Committee on A.S.A. Code for Pressure Piping of the Central Committee on Pipe Line Transportation of the American Petroleum Institute's Division of Production. C. A. Young is secretary.

Natural Gasoline

Compressors to Be Discussed At April C.N.G.A. Meeting

LOS ANGELES, Calif.—Compressor operation and maintenance will be the topic of discussion at the April 7th meeting of the California Natural Gasoline Association, announced J. C. Burks, president of the association. This subject was discussed at the previous meeting of March 10, but proved so interesting a field that part of the discussion was left unfinished for lack of time. Alex L. Robb, consulting engineer, will present a paper entitled, "Valves—How Important Are They?" A second paper will be presented by R. S. Ridgeway, mechanical engineer with Standard Oil Co. of California, and is titled "Getting the Most Out of Piston Rings."

These two papers represent a substantial contribution to the industry and will be of interest to the entire membership, according to B. D. Balthis, program chairman for the organization. After presentation of the papers the meeting will be open for general discussion of the material presented at both meetings.

California Gasoline Production Unchanged During February

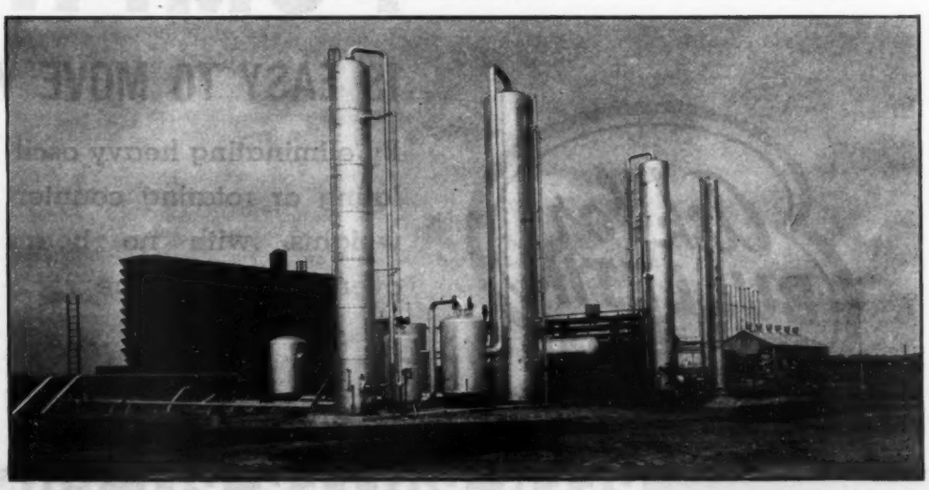
Daily average production of natural gasoline remained unchanged in California during February according to the Bureau of Mines report for that month, the average production remaining at 44,000 bbls. daily. This compared with 40,000 bbls. daily during February, 1937.

Refinery utilization declined 7,000 bbls. daily during the month and averaged 29,000 bbls. daily. Shipments increased 1,000 bbls. daily and totaled 57,000 bbls. for the month. Total stocks of natural, reflecting the decreased refinery utilization, increased from 2,115,000 bbls. on February 1 to 2,390,000 bbls. on the last of the month. Production of liquefied petroleum gases totaled 37,347 bbls. during February.

A summary of natural gasoline plant operations for the month is as follows:

Field—	Gas treated (thou. cu. ft.)	Natural gasoline produced (gallons)
San Joaquin Valley:		
Belridge	4,051,282	2,461,406
Elk Hills	49,594	107,289
Kettleman Hills	9,701,203	14,022,439
Midway-Sunset	1,074,962	1,995,766
Mountain View	468,560	564,682
Miscellaneous	968,962	523,134
Coastal district:		
Elwood	650,573	893,399
Rincon	126,608	184,057
Santa Maria	150,258	434,279
Ventura Avenue	3,441,979	4,678,039
Miscellaneous	593,855	511,792
Los Angeles Basin:		
Brea-Olinda Coyote	453,800	1,208,759
Dominguez	1,992,550	2,918,590
El Segundo	558,338	846,570
Huntington Beach	1,226,010	3,268,031
Inglewood	262,082	387,412
Long Beach	1,735,846	6,576,116
Montebello	381,307	503,188
Richfield	218,847	542,777
Rosecrans	386,885	720,153
Santa Fe Springs	2,022,449	4,990,370
Seal Beach	444,553	650,796
Torrance	94,910	213,998
Miscellaneous	1,005,032	2,293,816
Totals (all fields)	31,990,442	51,496,858

WARREN ADDING BUTANE EQUIPMENT AT ARANSAS PLANT



Warren Petroleum Co.'s recently completed natural gasoline plant in the McCampbell (Aransas) field near Corpus Christi, Tex. The plant is one of the most modern on the Gulf Coast, and to further modernize its operations the company is installing refrigeration equipment for the manufacture of butane. The plant is processing about 110,000,000 cubic feet of gas daily to produce some 65,000 gallons of natural.

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- DECREASE PITMAN ANGULARITY
- INSURE LONGER LIFE OF GEARS
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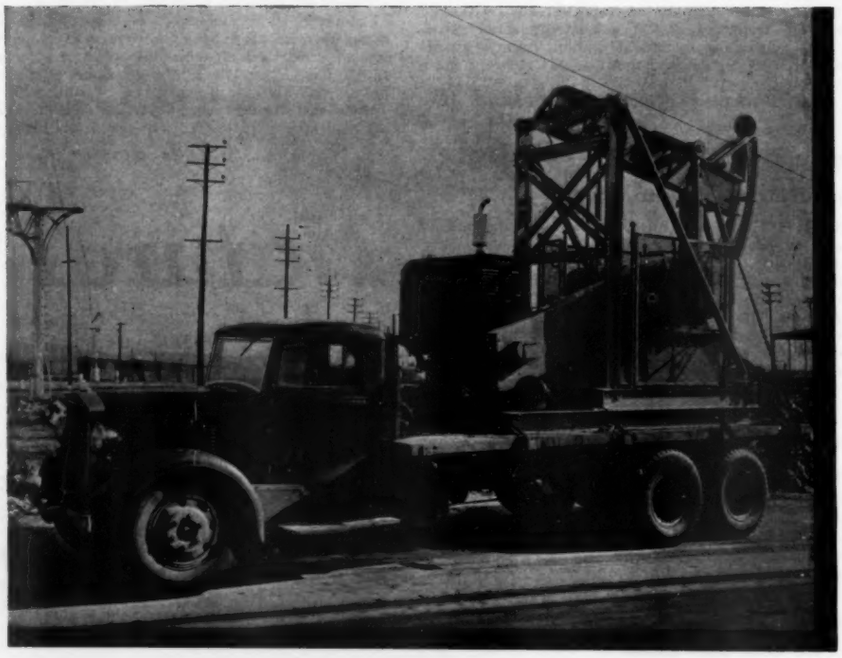

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Scientific Exhibits Arriving For Petroleum Exposition

"It is the largest and finest scientific exhibit of the petroleum industry ever assembled," said Dr. Gustav Egloff after inspecting plans for the display in the Hall of Science at the International Petroleum Exposition, to be held in Tulsa, May 14 to 21.

Doctor Egloff, director of research for the Universal Oil Products Co., is chairman of the committee arranging the scientific exhibit. He met the committee in Tulsa Saturday, when he received reports of subcommittees and inspected portions of the exhibit already in place.

The big problem facing the petroleum industry today is not the conservation of oil for posterity, but the finding or creating of a greater market for its products, Doctor Egloff told the committee.

"The useful use of oil in every possible manner is our major concern," he said. "The scientific exhibit in the Hall of Science, plus the several million dollars worth of equipment elsewhere on the exposition grounds, will show how the industry is endeavoring to increase the uses of oil and thus increase the market demand."

The first shipment of scientific exhibits from the Chicago Museum of Science and Industry, which are being loaned to the petroleum exposition, arrived in Tulsa last week. The material includes working models of equipment and methods used in many phases of the industry. Other models and scientific displays will be shown by various oil companies, manufacturing concerns and educational institutions. Value of the entire exhibit to be shown in the Hall of Science is estimated variously from $250,000 to $350,000.

The exhibits will be displayed to better advantage at the International Petroleum Exposition than in the Chicago Museum, Doctor Egloff said, because more space is available, permitting arrangement of displays to arrest attention. Strictly educational, the scientific and technical exhibit will show the oil man and layman alike how the industry is utilizing its raw products.

Army and Navy Aircraft to Use 100-Octane Exclusively

WASHINGTON, D. C., Apr. 4.—Both the Army and Navy will soon be using 100-octane gasoline exclusively for aircraft engines, and this is expected to reduce the price to the level of ordinary aviation gasoline, Major General Oscar Westover, chief of the Air Corps of the U. S. Army, told the house committee on appropriations during hearings on the War Department appropriation bill now before congress. At present, 100-octane gasoline costs 18 cents a gallon compared with 14 cents paid by the Army for ordinary aviation gasoline, but General Westover told the committee:

"The development of this new superior fuel is one of the outstanding recent advances in aeronautics, and gives the United States advantages possessed by no other nation. Although production is at present limited, the potentialities of our country's resources are practically unlimited. As 100-octane comes more and more into use, it is understood from the industry that in a comparatively short time, and as more commercial producers enter the field and production is accelerated, the unit price will be reduced to about the level of the currently used fuel, say 14 cents per gallon.

"In engines specially developed for 100-octane fuel, it is estimated improved performance and decreased fuel consumption will more than compensate for the additional fuel cost. The new engines being procured by the Air Corps are designed to use 100-octane and, until all engines now in service are replaced by the new design, the full effect of these advantages will not be experienced. However, as a step in the right direction, the War Department believes that now is the time for the government to begin to receive the benefit of 100-octane fuel. The Air Corps has been instrumental in the development of 100-octane and as it is now becoming available in large quantities, the advantages to national defense should be of the first consideration.

"When we first started to buy the 100-octane gas in quantities we were quoted an average price of over 20 cents. We have got it down to 19.5 cents, with about 50 per cent use this year. We had expected the navy also to use 100-octane gas, at about the same ratio that we do. But the navy was anywhere from six to nine months behind us in its use of this fuel, due to the rate at which its new engines are coming out. Eventually we will both be on the 100 per cent basis, and at that time we should get the cost of that 100-octane fuel down to approximately our present cost of gasoline. There are now only six concerns making the 100-octane fuel, Humble Oil & Refining Co., Houston, Tex.; Shell Union Oil Co., New York; Shell Petroleum Corp., St. Louis; Shell Oil Co., San Francisco, Calif.; Standard Oil Co. of Louisiana, Baton Rouge, La.; Standard Oil Co. of New Jersey, New York. Three other companies are preparing to make this fuel and should be in a position to bid on the next circular proposal issued.

"The commercial airlines are gradually getting into that field. The Pan American line today is using a 93- or 95-octane gas, which is practically the equivalent of 100-octane gas. That is due probably to a difference in the engines used for their purposes as compared with our engines."

West Virginia Oil Group Offers Prize on Taxation Essay

PARKERSBURG, W. Va.—The West Virginia Petroleum Association has announced that a prize essay contest on petroleum taxation has been offered to the students of West Virginia University, West Virginia Wesleyan College and Marshall College. A prize of $25 will be awarded to the student preparing the best thesis on taxation affecting the petroleum industry.

Edwin F. Patrick, secretary of the association, said the group has endeavored to encourage students to center their attention on some of the more fundamental economic problems affecting petroleum taxation in West Virginia.

Revenue Bureau Rules on Station Security Taxes

WASHINGTON, D. C.—The recent rulings of the Bureau of Internal Revenue regarding the social security tax status of operators of filling stations leased from oil companies were not unexpected by tax attorneys of most oil concerns, and most companies which have let out their stations on lease and agency agreements have revised their contracts so they will not be liable for social security taxes on the earnings of station operators and employes. The bureau selected for its rulings two extreme types of lease and agency agreements, one where the company exercised no control whatever over the activities of the station operator and collected only a stipulated cash rent on a six months' lease, and the other where the station operator was obviously an agent of the company and subject to its control in practically all his activities.

In the first case, the bureau ruled the oil company is not liable for any of the social security taxes on the station operator and the operator must himself pay the taxes on his employes. In the second case, the bureau ruled the station operator is an employe of the oil company, and the company is liable for taxes on his earnings and on the salaries of his employes.

In making these rulings, the bureau followed the definition of employment in the social security act and regulations, that the relationship of employer and employe exists if the person for whom services are performed has the right to direct and control the individual who performs the services, not only as to the result to be accomplished by the work, but also as to the details and means by which that result is accomplished.

Between these two extreme cases selected by the bureau, there exists a vast number of variations in lease and agency contracts which remain to be interpreted, and in every case the bureau will apply the test of the extent to which the company actually treats the operator as an employe, regardless of the phraseology of the lease and agency contracts. To this end the bureau may conduct investigations or secure affidavits where there is a suspicion that although the station operator is an independent dealer by the wording of his contracts he is actually controlled and dominated by the company.

University of Texas Leases Are Auctioned at Austin

AUSTIN, Tex.—Col. E. Walters, veteran auctioneer from Skedee, Okla., sold 62 leases of University of Texas land in West Texas for $484,000. The university leased 11,035.6 acres in or adjacent to oil production for an average of $43.90 per acre.

P. G. Northrup, of San Angelo, acquired 12 leases in Andrews County for $178,400. Atlantic Oil Co. obtained seven in Crane and three in Andrews counties, totaling $127,000, and Phillips Petroleum Co. three in Andrews for $63,500. Humble Oil & Refining Co. paid $35,300 for eight in Crane and Andrews counties.

The highest price was $34,000, paid by Northrup for tract No. 70 in Andrews County, 165.4 acres in the southeast quarter of Block 10, section 32. Northrup also paid $32,500 each for similar tracts in sections 30 and 19.

Texas Co. purchased three leases for $6,900; Shell Petroleum Corp., two for $5,100; Skelly Oil Co., two for $6,300; Gulf Oil Co., three for $16,600; W. G. and B. H. Rogers, five for $8,400; Superior Oil Co., two for $8,900; Magnolia Petroleum Co., six for $12,100; Cities Service Oil Co., three for $7,500; Tide Water Associated Oil Co., one for $3,500; J. A. Rauhut, of Austin, one for $2,200; and Sun Oil Co., one for $1,800.

THE MARKETS*

CRUDE OIL: *Lower output apparently is assured for April. This action is necessary due to the large additions to storage in March. In Oklahoma and Kansas, where state proration bodies have failed to reduce supply to indicated demand, major companies are prorating purchases as low as 75 per cent. No sales of crude under the market reported.*

REFINERY: *Refinery gasoline and natural gasolines generally firm east of California with shipments higher than expected following recent increases in rail rates. Fair to strong demand for tractor fuels and kerosene. Fuels weak with lower bunker prices announced for Gulf Coast and Atlantic seaboard.*

TANK-WAGON AND POSTED DEALER: *No important changes.*

FINANCIAL: *Average prices on common oil stocks last week reached a low which was approximately 50 per cent of the last year's high but recovered two points at close of week. Average for 30 representative stocks for week ending April 2: High, 25.14; low, 22.69; close, 24.64. Week ending March 26: High, 27.79; low, 24.18; close, 24.41.*

**Detailed information in market section.*

OHIO OIL CO. *reported for 1937 net income after all charges of $11,862,107 equivalent, after preferred dividends, to $1.31 per common share. This compares with $7,881,571 or 70 cents per share in 1936.*

SKELLY OIL CO. *reported for 1937 net income after all charges of $6,488,346 equivalent, after preferred dividends, to $6.07 per common share. This compares with $4,850,315 or $4.42 per share in 1936.*

STANDARD OIL CO. INDIANA—*Net earnings, plus share of earnings of subsidiary companies, reached about $55,900,000 for 1937. Profits amounted to $3.66 a share compared to $3.09 a share in 1936.*

PLYMOUTH OIL CO. *reported for 1937 net income after all charges of $2,935,342 equivalent to $2.85 per share. This compares with $1,739,681 or $1.65 per share in 1936.*

INTERNATIONAL NEWS

Gulf Exploration (Great Britain) Increases Its Capitalization

Gulf Exploration (Great Britain), Ltd., English subsidiary of Gulf Oil Corp., has increased its capital to 60,000 pounds following acquisition of several new prospecting licenses totaling 669 square miles. Recent additions to Gulf's holdings in United Kingdom prospecting permits gives the company almost equal rank with other concerns, Anglo-American Oil Co., Ltd., Standard of New Jersey subsidiary, and Anglo-Iranian, although the latter has the most extensive holdings since it is a British company and the first to start the new exploration campaign.

Gulf Exploration is to drill a test well on some portion of its holdings in Great Britain during the present year.

Sixth Test in Pantepec Area By Standard of Venezuela

Standard Oil Co. of Venezuela is moving in material for its sixth test on Pantepec acreage in eastern Venezuela. The sixth test, which will fulfill the company's original development contract, is to be No. 1 Algarrobo. The test is the most western of the group drilled in eastern Venezuela, being approximately 2 kilometers west of Standard of Venezuela No. 1 Yopales in the district of Miranda, State of Anzoategui. No. 1 Algarrobo is about 20 miles of Mene Grande Oil Co. Oficina wells. The option contract between Pantepec and Standard of Venezuela comes up for extension during the middle of this year. At that time, Standard of Venezuela has the privilege of deciding whether exploration will be continued, carrying Pantepec for its retained interest in the holdings.

Japanese Form Committee To Deal With Petroleum

Japan has organized a new branch of the government to deal with all petroleum matters, excepting those considered military secrets which are specifically exempt from reference to the Committee on Liquid Fuel. The ordinance creating the new committees to deal with Japan's liquid and synthetic fuel questions provides:

Article 1. "The Committee on Liquid Fuel" shall be under the direction of the Minister of Commerce and Industry, and it shall investigate and deliberate on matters which are within its sphere in accordance with the provisions of the "Petroleum Business Law, Article 8" and the "Synthetic Petroleum Business Law, Article 18." Aside from the above, it shall investigate and render decisions on important matters of liquid fuel, in response to the requirements of the Ministers concerned. It may also, of its own accord, make representations to the Ministers concerned regarding the matter of liquid fuel.

Article 2. When an order given, in accordance with the "Petroleum Business Law, Article 7," is a military secret, it need not be referred to the committee.

Article 3. The Committee on Liquid Fuel shall be composed of one chairman and up to the limit of 40 members. If it is necessary for the investigations and the rendering of decisions on special matters, temporary additional members may be appointed.

Article 4. The Minister of Commerce and Industry shall be the chairman of the committee. Members and temporary members shall be appointed by the cabinet from among (1) senior officers of the government departments concerned and (2) men of learning and experience in accordance with the petition rendered by the Minister of Commerce and Industry to the Emperor. The term of membership for those appointed under (2) of the above paragraph shall be two years; however, under special circumstances they may be released before the above stated term is ended.

Article 5. The chairman shall govern the committee. When any circumstances prevent the chairman from carrying out the business of the committee, a member shall be appointed by the Minister of Commerce and Industry to act in the capacity of chairman.

Article 6. A manager of the committee shall be appointed by the cabinet in accordance with the petition rendered by the Minister of Commerce and Industry to the Emperor. The manager of the committee shall conduct the business of the committee through the direction of the chairman.

Article 7. A clerk shall be appointed by the Minister of Commerce and Industry. He shall look after the general business of the committee.

Supplementary provisions.—This ordinance shall be enforced from the date of the enforcement of the "Synthetic Petroleum Business Law." The organization of the "Committee on Petroleum Business" shall be dissolved.

A Japanese government sponsored oil company is reported in Tokio dispatches prepared to take over petroleum markets in North and Central China. Standard-Vacuum Oil Co. and Royal Dutch-Shell group were the largest marketers in China prior to the conflict with Japan.

Netherland East Indies 1937 Production Increased

Crude oil production in the Netherland East Indies increased 12.8 per cent in 1937 to the official total of 55,202,452 bbls. For the entire group of islands, including estimates of 4,424,000 bbls. from Brunei and 1,602,000 bbls. from Sarawak the total was boosted to 61,228,450 bbls.

Greatest activity was registered in the fields in Java where total production increased 92.7 per cent during the past year. This island now ranks third in importance as an oil producing center in the Netherlands East Indian possessions while in 1936 it was only ranked sixth.

Heavier production was also registered by Ceram, Djambi and North Sumatra, where the output for the year increased 43.1, 33.6 and 18.8 per cent, respectively. The most important fields in the group, those in Palembang and East Borneo, showed a gain of only 8/10 of 1 per cent and a loss of 2.2 per cent, respectively. Operations in Boenjoe were almost totally stopped during the past year.

Detailed figures by fields for 1937 compared to 1936 are shown in the following table:

(Figures in Metric Tons)

Field	1936	1937
Java and Madura	498,999.1	961,599.2
North Sumatra	689,945.2	819,798.8
Palembang	2,761,710.7	2,784,447.9
Djambi	663,053.8	885,832.4
East Borneo	1,028,506.0	1,005,781.3
Tarakan	740,003.1	733,619.2
Boenjoe	5,035.8	207.3
Ceram	50,446.4	72,194.5
Totals	6,437,700.1	7,263,480.6

Conversion factor 7.6 U. S. bbls. per metric ton.

Rumania May Modify Law To Stimulate Production

Forced with continued decline in crude oil production, Rumania has taken steps to reverse the curve with steps leading to a modification of the drastic mining law passed in March, 1937.

Dispatches from Rumania last week related that a five-year plan has been established to increase Rumania oil production and to be based on agreements between the government and private companies. The announcement quoted Industry Minister Constantin Argetoianu.

The companies would undertake to set up reserve funds which would permit them to begin shortly intensive prospecting of new petroleum areas. Two commissions were named for this purpose by royal decree. Among their membership are representatives of the companies, notably Otto Stern of Astra-Romana and Ralph Bolton of Romano-Americana Co., subsidiaries of Shell and Standard of New Jersey, respectively.

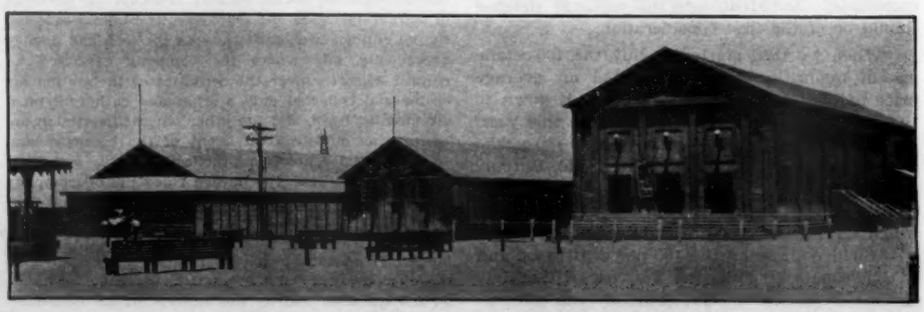
After enactment of the new mining law in 1937 which virtually restricted exploration, excepting under extremely unfavorable circumstances, to 100 per cent Rumanian companies, foreign companies, chiefly Shell and Standard of New Jersey subsidiaries, were compelled by the mining law to halt exploration. During the year following most of the available locations in proven fields were drilled up, but they provided insufficient production to overcome the normal declines.

There is no positive assurance further exploration will remedy the normally declining production, but several favorable areas have been mapped which justify testing. The 100 per cent Rumanian companies lack the capital necessary to carry on any widespread exploration program and at the end of last year it was indicated that modification would be necessary if the country expected to hold its place as Central Europe's most important petroleum country.

Creation of exploration commissions with executive heads of foreign concerns included in the membership is accepted as indication that American and British capital is being invited to participate both technically and financially. Details of the proposed plan have not reached New York offices of the companies interested, but in view of the agitation in the past 9 or 10 months for modification of the mining laws it is assumed this has been accomplished.

Germany Has Oil Problem on Its Hands in Austria

Another liability, so far as developed petroleum reserves are concerned, was assumed by Nazi Germany's annexation of Austria which produces only about 10 per cent of its requirements. It has been only during the past year that Austria's crude oil production was sufficient to supply even the present 10 per cent of internal requirements. At the end of 1937 Austria was producing approximately 1,000 bbls. of crude per day mostly from the Zistersdorf field which has recently doubled its output by addition of the area's largest well. Production for 1937 was near the 200,000-bbl. mark compared to slightly more than 50,000 bbls. in 1936. Changes in the European map, however, bring Hungary within easy reach of the German empire and one of central Europe's best recent discoveries is located in that country near the Jugoslavian border. The Hungarian discovery was made late in 1937 by the European Gas & Electric Co., an affiliate of Standard of New Jersey. The original discovery oil well is now producing at the restricted rate of 200 bbls. per day on what is known as the Budafapuszta structure and another well is nearing the regular producing depth. Crude from the new Hungarian field is being moved through a short pipe line to a railroad loading rack and thence to refineries.



Cinema and Peruvian club, Negritos, Peru

ENGINEERING and OPERATING

In This Issue

COMBINATION UNITS UTILIZE DIESELS FOR LIGHT OIL CHARGING
By Walter Ullrich and H. M. Curtis ..... *Page 30*

Two combination units were recently completed in which are included accumulative developments in the art of cracking of the past several years. Diesel engines are used to drive the light oil charging pumps and through extensive use of heat exchanging the steam loads are greatly lowered. Waste heat is used for steam generation.

PRESSURE PRODUCTION RELATIONSHIP IN THE EAST TEXAS FIELD
By Stuart E. Buckley ..... *Page 34*

Interest in the relation between reservoir pressure and production rate in the East Texas field has received an added impetus from the recently accelerated pressure decline. Here is discussed the possible effect of unrestricted water production on the reservoir pressure, the future flowing life of the field and its ultimate production.

SEVERAL BENEFITS GAINED FROM NEW WELL COMPLETION METHOD
By T. P. Sanders ..... *Page 39*

In the Long Beach harbor area of the Wilmington field two wells were recently completed as three-in-one wells in that they produce from three zones simultaneously without mixing the crudes. The method of completing these wells is described and its advantages pointed out.

SWEETENING GASOLINE BY ELECTROLYTIC REGENERATIVE PROCESS
By S. C. Smith ..... *Page 44*

Refiners have devoted much attention to methods of treating gasolines in the past several years in an effort to improve on present processes. Here the author describes the electrolytic regenerative process in which sodium ortho-plumbate is used as a treating agent.

CONTROLLING LOAD ON GAS COMPRESSORS BY CLEARANCE POCKETS
By T. Hume West ..... *Page 46*

Operators of gas compressor plants sometimes find it necessary to change the pressure range of existing equipment and desire to do so without buying new cylinders. A method for determing proper cylinder size for a required load and for temporarily unloading cylinders by increasing the size of the clearance pockets is described.

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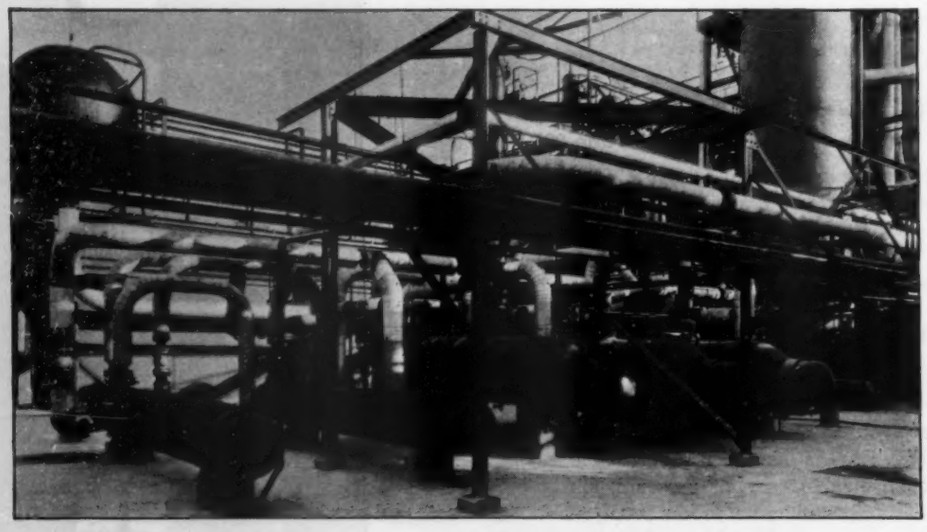
QUESTIONS ON TECHNOLOGY—*By C. K. Francis, Ph. D.* ..... *Page 58*

Combination Units Utilize for Light Oil Charging

By WALTER ULLRICH and H. M. CURTIS
The Lummus Co., New York

Selective cracking has been developed to a point where refiners are given considerable latitude in determining their production schedules and in the utilization of available crudes. The broad principles representing the accumulative development of the cracking art over the past five or ten years were embodied in two units recently designed and erected by the Lummus Co. for a major refining organization.

The units were of the combination type, one including the crude distillation operation with complete cracking and the other comprising only the cracking of reduced crude. The installation of the unit including crude distillation was the second of its type in the same refinery, which together more than doubled the crude capacity of that plant. The unit for cracking only operates on the reduced crude from a previously constructed distillation plant. The units embody many of the principles employed in other units erected by Lummus for handling East Texas and West Texas crudes.



Steam generators and exchangers from which part of the utility requirements are produced

TABLE 1—CRUDE OIL INSPECTION

(True Boiling Point Distillation)

Type—	Plant No. 1	Plant No. 2
Gravity, degrees A.P.I.	39 0	39 0
I.B.P. degrees F.	82	90
5 per cent at degrees F.	135	166
10	185	218
15	225	265
20	285	296
25	293	345
30	335	379
35	379	416
40	423	454
45	471	494
50	522	534
55	569	573
60	617	613
65	687	...

A particularly noteworthy feature of one of these units was that it is almost an exact duplicate of a unit built two years previously by Lummus for the same customer, and in its erection the contractor was enabled to duplicate orders for part of the material and was thereby enabled to complete the job in exceptionally rapid time.

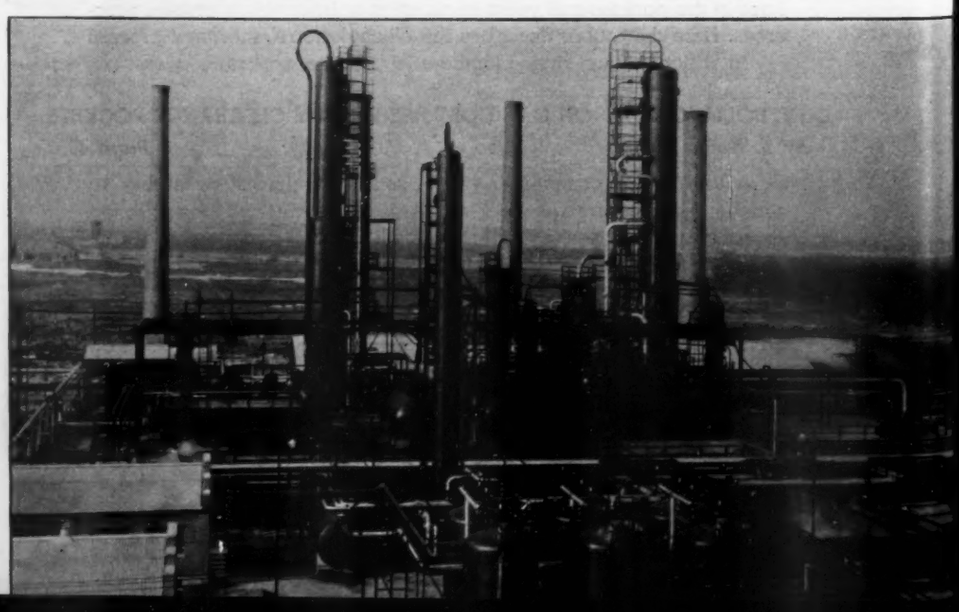
The combination crude distillation and cracking unit here described has a crude capacity varying between 5,700 and 8,500 bbls. per stream day, depending upon the type of operation and the crude. A difference from its predecessor in the same refinery is that it is provided with a separate crude furnace in addition to a reformer, vis breaker, heavy gas oil and light gas oil coils. This gives it somewhat increased flexibility over the original which drew heat for crude distillation solely from exchange on the cracking plant. In addition, the unit has facilities for the manufacture of virgin and cracked furnace oils. By the arrangement in these units the recycle gas oil may be subjected to more severe cracking conditions than if blended with virgin stock which would limit the temperature applicable due to coke formation.

In operation of the combination unit, it is optional with the operator whether furnace oil is withdrawn as a sidestream from the crude tower or charged to the cracking system. After driving off straightrun gasoline boiling below 204 to 226° F. the material boiling up to 455° F. is taken as sidestream for the reformer coil charge without cooling, where it is raised to outlet temperatures of 980 to 985° F. An uncracked furnace oil stream and a gas oil cut are also taken as side streams from the crude tower. The furnace oil is

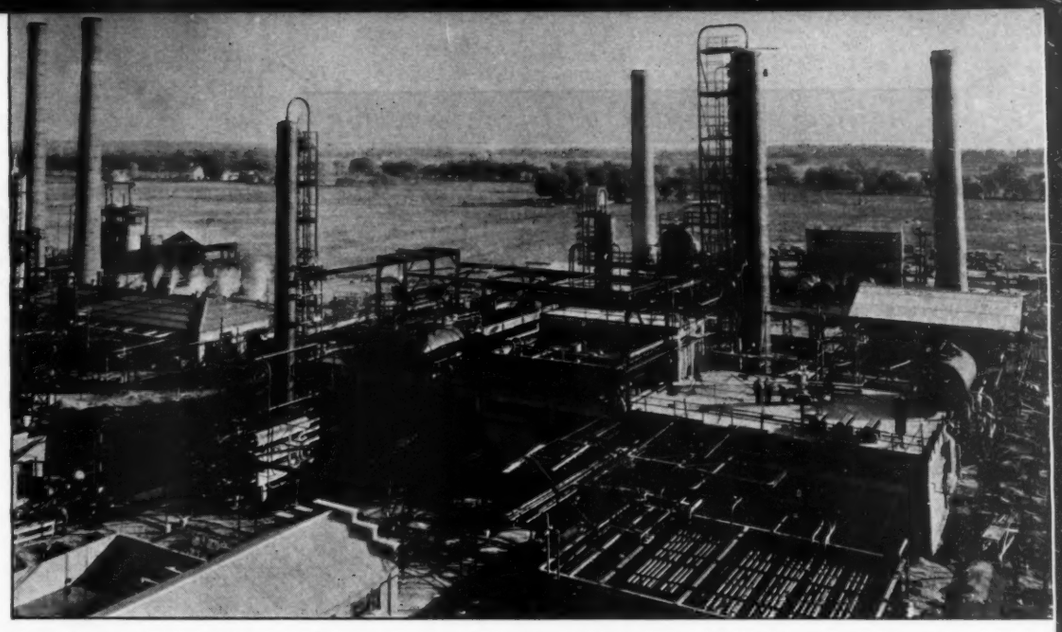
TABLE 2—TOPPING OPERATION

	Plant No. 1	Plant No. 2 Case No. 1	Plant No. 2 Case No. 2
Straightrun gasoline:			
Volume per cent of crude	21 2	9 6	4 5
Gravity, degrees A.P.I.	65 9	82 9	86 8
5 per cent degrees F.	128	96	82
Endpoint, degrees F.	318	226	204
Octane No. L-3 method	60 6	59 8	....
Naphtha:			
Volume, per cent of crude	11 7	28 5	22 5
Gravity, degrees A.P.I.	50 3	57 1	60 1
5 per cent, degrees F.	298	230	212
Endpoint, degrees F.	388	408	384
Kerosene:			
Volume, per cent of crude	12 9	....	....
Gravity, degrees A.P.I.	42 3	....	....
5 per cent, degrees F.	399	....	....
Endpoint, degrees F.	522	....	....
Furnace oil, uncracked:			
Volume per cent of crude	....	....	19 3
Gravity, degrees A.P.I.	....	....	47 5
5 per cent, degrees F.	....	....	386
Endpoint, degrees F.	....	....	531
Light gas oil:			
Volume per cent of crude	....	11 8	....
Gravity, degrees A.P.I.	....	45 0	....
5 per cent, degrees F.	....	422	....
Endpoint, degrees F.	....	614	....
Straightrun heavy gas oil:			
Volume per cent of crude	....	10 4	13 4
Gravity, degrees A.P.I.	....	41 5	40 8
5 per cent, degrees F.	....	480	452
Endpoint, degrees F.	....	643	630
Reduced crude:			
Volume, per cent of crude	53 2	39 0	39 0
Gravity, degrees A.P.I.	19 8	27 9	27 9
Viscosity at 100° F., S.-U.	386	....	....

General view of the combination unit showing the crude tower, flash drum and high-pressure fractionator with the gasoline stabilizer in the center foreground



Diesels Pumps



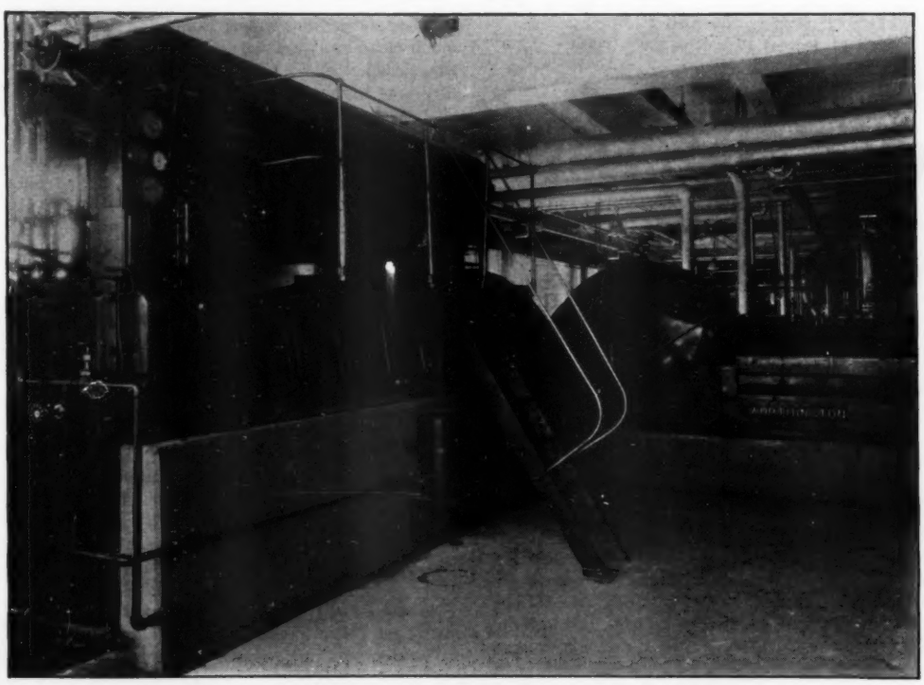
Cracking unit operating on topped crude from a previously built distillation plant. The principal feature of this combination unit is the elimination of a reformer coil

taken off as a finished product or charged to the cracking system. The gas oil is charged to the cracking system.

Reduced crude is withdrawn from the base of the tower and discharged to the fuel oil flash tower where it is intimately mixed with flashed heavy recycle. The mixture is then withdrawn to a drum and constitutes vis breaker charge. The bottoms from the flash tower go to fuel oil storage. The vis breaker in this plant was operated at rates of 4,350 to 4,400 bbls. per day of 22.4 to 24.5° A.P.I. gravity stock. Temperature on the reduced crude was raised from inlet temperatures of 610-625° F. to 870° and the outlet pressure remained constant at 220 pounds per square inch. The gas oil and cracked naphtha vapors derived from the light and heavy gas oil coil discharges, as well as the vis breaker discharge, are fractionated in the high-pressure bubble tower which operates at 205 pounds pressure and at temperatures ranging from 725 to 760° F., depending on the type of operation. The cracked tars are flashed in the fuel oil flash tower and the residue makes up the fuel oil discharge to storage.

From the top of the high-pressure fractionator, cracked gasoline is withdrawn overhead. Light recycle stock is discharged from the fractionator at an intermediate drawoff pan and is taken to an accumulator to make up the charge for the light gas oil furnace. Heavy cycle stock is taken from bottom of the fractionator and is pumped to the heavy gas-oil coil.

Heavy gas oil is charged at rates of 3,500 to 4,150 bbls. per day, depending on the type of operation, and is maintained at a temperature of 935° F. and pressure of 400 pounds. Temperature and pressure on the light oil heater are higher as shown in the accompanying tables. The charge temperature is raised to 975 or 985° F. and outlet pressure is 600 pounds. Cracked gasoline taken overhead from the fractionator is blended with unstabilized straightrun gasoline and charged to the stabilizer which is operated at pressure of 260 pounds and a bottom temperature of 375 to 410° F., depending on the vapor pressure requirements.



Diesel engine and pump used for charging the light gas-oil furnace

One of the features of the two plants is the use of diesel engines to drive the light gas-oil furnace charge pumps. Detailed attention to full utilization of heat from products in the refining process has minimized requirements for steam, effecting an economy of operation which is receiving widespread application in the industry at large.

In the refinery where the cracking unit operates with a separate crude distillation plant, about 6,800 bbls. crude throughput can be handled when taking approximately 10 per cent kerosene as a side stream from the crude tower. The cracking plant used in this case differs from that which is integral with the crude distillation operation previously described in that the reformer has been eliminated. In this arrangement, heavy naphtha sidestream from the crude tower is introduced on the inlet side of the light gas-oil heater, mingling with light gas oil from the fractionating tower for cracking. Under existing conditions, the production of 61 per cent stabilized gasoline with minimum of 66 octane and 10 per cent kerosene is obtained.

TABLE 3—CRUDE CHARGE AND HEATER DATA

		Plant No.2	
	Plant No. 1	Case No. 1	Case No. 2
Crude charge rate, B/D	7,200	5,770	8,000
Viscosity breaker heater:			
Throughput, B/D	5,400	4,350	4,200
Feed gravity, °A.P.I.	20 0	22 4	20 0
Inlet temp., °F.	640	610	620
Outlet temp., °F.	885	870	875
Outlet pressure, lbs. per sq. inch	220	220	220
Heavy oil heater:			
Throughput, B/D	4,700	4,150	....
Feed:			
Gravity, °A.P.I.	20 1	22 5	....
50 per cent at °F.	574	550	....
90 per cent at °F.	710	692	....
Color, N.P.A. (dil)	4	....	....
Inlet temp., °F.	750	760	....
Outlet temp., °F.	935	935	....
Outlet pressure, lbs. per sq. inch	400	400	....
	Gas oil	Naphtha	
Light oil heater:			
Throughput, B/D	6,800	840	6,500 5,200
Feed:			
Gravity, °A.P.I.	29 1	50 3	31 6 30 5
50 per cent at °F.	480	318	364 562
90 per cent at °F.	560	338	518 668
Color, N.P.A.	2	2	....
Inlet temp., °F.	550	550	595 530
Outlet temp., °F.	975	975	985 950
Outlet pressure, lbs. per sq. inch	600	600	600 600
Reformer heater:			
Throughput, B/D	....	....	1,650 1,800
Feed:			
Gravity, °A.P.I.	....	....	57 1 60 1
50 per cent at °F.	....	....	304 266
90 per cent at °F.	....	....	488 336
Color, N.P.A.	....	....	....
Inlet temp., °F.	....	....	290 260
Outlet temp., °F.	....	....	980 985
Outlet pressure, lbs. per sq. inch	....	....	750 750

In this cracking operation only two sidestreams were being withdrawn at the time the data were obtained. Straightrun gasoline is taken overhead from the crude tower with naphtha and kerosene withdrawn from side of the tower and reduced crude taken from the bottom. In present plant practice a gas oil sidestream is removed from the crude tower and charged directly to the cracking system. Reduced crude is charged to the fuel oil flash tower. Charge for the vis-breaker furnace is taken as a sidestream from the fuel oil flash tower while the overhead is stripped and run to an accumulator where suction is taken by the light gas-oil furnace pumps. Part of the stream is used to reflux the flash tower which operates at pressure of 5 pounds and a temperature ranging from 550 to 600° F. Vapors from the vis breaker, heavy gas-oil and light gas-oil coil discharges are fractionated in the bubble tower, from which cracked gasoline is taken overhead, cooled and mixed with straightrun gasoline to make up the stabilizer charge. The cracked tars are flashed in the fuel oil flash tower.

When running to three grades of light furnace

oil (No. 1 uncracked, Nos. 1 and 3 cracked), the yield of stabilized gasoline from the combination distillation and cracking unit is lowered to 42 per cent of the crude charge. Without removal of the furnace oil cuts, this plant is capable of producing 66.8 per cent stabilized gasoline, indicating the range of flexibility available to meet seasonal requirements and marketing conditions.

By injection of the reduced crude above the viscosity breaker charge drawoff, additional reduction of the bottoms from the crude tower are obtained by contact with the higher temperature vapors rising from the fuel oil flash section. Use of a fuel oil flash tower of this type produces a heavier cracked tar than could be obtained by securing a greater vaporization direct from the cracking coil discharges, since the latter method would give a heavier stock in the bubble tower bottom and thus limit the cracking conditions that could be used in the heavy oil heater.

With this method employed in the type of cracking units here described, the material flashed from the fuel is sent through the vis breaker and cracked to light and heavy oil heater charge.

Light ends going to the vis breaker heater are controlled by reflux at the top of the fuel oil flash tower. Overhead from the fuel oil flash tower is used for refluxing this tower and is refluxed back to the higher pressure fractionating system. Careful attention to design, close supervision of installation and care in operations made possible initial test runs of more than 35 days on each of the new units. Specification products were made throughout the runs. The initial test run on the plant in the combination crude and cracking unit extended for 37 days before fires were cut to make routine inspection.

Still another feature of the two cracking plants under description is the production of steam from waste heat in the unit.

TABLE 4—YIELDS AND PRODUCTION INSPECTIONS

Yield (volume per cent on crude)—	Plant No. 1	Plant No. 2—Case No. 1	Plant No. 2—Case No. 2
Stabilized gasoline	61.0	65.8	42 8
Kerosene	10.2	....	....
Fuel oil	21.7	22.2	19.2
Gas	8.0	12.3	8 1
Furnace oil (No. 1) uncracked	....	....	19 3
Furnace oil (No. 1) cracked	....	....	5.7
Furnace oil (No. 3) cracked	....	....	5 9
Stabilized gasoline:			
O.N., C.F.R., A.S.T.M.	66.1	62.8	61
Gravity, degrees A.P.I.	60 4	64 9	65 7
I.B.P., degrees F.	88	86	86
10 per cent at degrees F.	131	136	118
50 per cent at degrees F.	250	240	219
90 per cent at degrees F.	366	386	346
Endpoint, degrees F.	402	390	383
Reid vapor pressure	11 0	11 0	10 6
Color, untreated Saybolt	28	25	25
Gum untreated, copper dish mg. 100cc	17	....	....
			No. 1 furnace oil (uncracked)
Kerosene:			
Gravity, degrees A.P.I.	42 3	....	47
I.B.P., degrees F.	385	....	366
10 per cent at degrees F.	404	....	406
50 per cent at degrees F.	431	....	445
90 per cent at degrees F.	478	....	497
Endpoint at degrees F.	522	....	534
Flash, T.C.C.	162	....	....
No. 1 furnace oil (cracked):			
Gravity, degrees A.P.I.	....	....	40 0
I.B.P., degrees F.	....	....	332
10 per cent at degrees F.	....	....	390
50 per cent at degrees F.	....	....	433
90 per cent at degrees F.	....	....	613
Endpoint degrees F.	....	....	693
No. 3 furnace oil (cracked):			
Gravity, degrees A.P.I.	....	....	29 3
I.B.P., degrees F.	....	....	301
10 per cent at degrees F.	....	....	455
50 per cent at degrees F.	....	....	550
90 per cent at degrees F.	....	....	611
Endpoint degrees F.	....	....	649
Fuel oil:			
Gravity, degrees A.P.I.	9.6	9 7	9 8
Viscosity, Furol at 128° F.	315	124	130
B.S. W., per cent	0.5	0.8	0 9
Sediment, per cent	0.11	....	0 53
Pour, maximum degrees F.	35	25	....
Flash, P.M., degrees F.	+230	+230	+230

New Method of Cleaning Sand From Oklahoma City Wells

By G. S. SCHUHMACHER
Reda Pump Co.

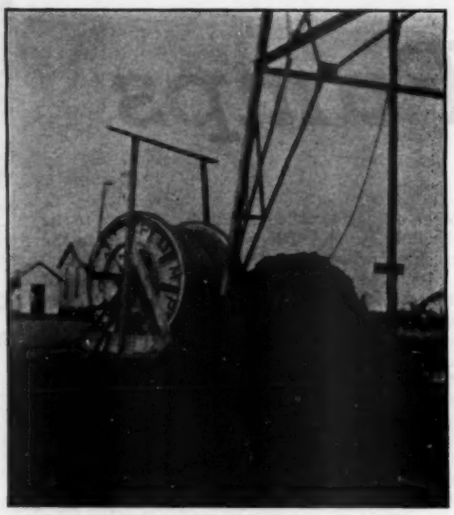
The combination of extremely low bottom-hole pressure with high productivity in the Wilcox sand zone of the Oklahoma City field has led to production methods which differ from the general practice of attempting to produce wells in such a manner that sand is not produced with the fluid. The Wilcox sand is a very permeable formation found about 6,500 feet deep at Oklahoma City and had an original bottom-hole pressure of 2,600 pounds per square inch. The wells flowed naturally in most cases until this pressure declined to 500 pounds and in several cases wells with 150 pounds or less pressure flowed 2,000 to 3,000 bbls. of oil per day. Large quantities of sand were produced during the natural flow life of most wells. This did considerable damage to surface equipment but it was considered better to flow the sand from the well than to let it settle to bottom and cause expensive and dangerous clean-out jobs.

Liners were tried in only scattered instances. The size of the sand grains is irregular with a large percentage of fine sand. This meant small liner openings must be used which could plug easily. Due to the extremely low bottom-hole pressures in the latter stages of natural flow and all through the artificial-lift life of the wells, any restriction was very detrimental. Gravel-packed liners were tried but in most cases were considered unsuccessful and were pulled.

The proration of this zone is based on the open-flow capacity of the wells. Following natural flow most potentials were taken with the centrifugal bottom-hole pump combined with gas-lift. The pump lifts the fluid only a few hundred feet to where it is discharged above a packer into the annular space between the tubing and casing. Input gas is injected through the tubing and the discharge of fluid and gas to the surface is through the annular space. Tests with this equipment showed many of the wells had capacities of over 6,000 bbls. per day when the static bottom-hole pressure was below 125 pounds per square inch. Producing at these rates caused much sand to be carried into the pumping equipment. Typical results showed 10 to 25 bbls. of sand produced per hour with oil-production rates from 150 to 300 bbls. per hour.

At slower rates of production in wells in which the centrifugal pumps were used to pump the entire 6,500 feet to the surface without the combination use of gas-lift, remarkable results were obtained also. One unit produced 2 per cent sand for 45 days' continuous operation before wear caused enough slippage to make the pump capacity fall to 75 per cent of the initial production. Another unit produced 500 bbls. of oil and 100 bbls. of sand in 12 hours.

When results as these showed that the centrifugal oil-well pump could be used to pump sand or other solids in suspension from the wells much as centrifugal pumps are used aboveground on sand dredges, a new method of cleaning out oil wells was developed. As was stated earlier, the wells were produced on natural flow at a rate that would



Sand removed from Sunray Oil Co. No. 1 Avey in Oklahoma City pool by use of centrifugal pump

lift the sand to the surface. Following natural flow much clean-out work was done with gas-lift. This was satisfactory as long as the bottom-hole pressure was high enough to support the column of oil heavily laden with sand. When the reservoir pressure fell too low for this, some means of building up an artificial bottom-hole pressure was needed if clean-out work was to be carried out under producing conditions. This pressure was supplied by the centrifugal pump.

Cleaning out while the well was producing washed in loose sand which could not be reached by the conventional bailer or sand pump. In 40 clean-out jobs the wells were bailed to bottom and as much sand removed as possible before the centrifugal pump was installed. The results with the pump showed the average production was 3,000 bbls. of oil and 25 to 30 bbls. of sand in 24 hours. This was sand that otherwise would have remained in the well to give trouble.

Sand troubles were greatly reduced following cleaning out by the centrifugal-pump method. Wells which gave trouble in two to four days following conventional cleaning out gave 20 days' trouble-free operation following this type of clean-out.

In addition to increasing production, due to less down-time following this type of clean-out, more production was made as oil was produced during the clean-out job.

The average time taken for each of 40 centrifugal pump clean-out jobs was 48 hours. Twelve hours were required to install the pump, 24 hours for producing or cleaning out and 12 hours to remove the equipment from the well.

Mid-Continent Oil Map

A new wall map of the Mid-Continent states, covering an area extending from Lincoln, Neb., and Cheyenne, Wyo., to the Gulf Coast, and from Columbus, Ohio, and Atlanta, Ga., to the west side of New Mexico, shows the location and names of oil and gas fields; the location and ownership of all trunk oil and gasoline pipe lines; the location and ownership of refineries and the crude and cracking capacity of each plant, and the type of its products. The map has been compiled and issued by George F. Kelly, 223 Kennedy Building, Tulsa.

During the past two years, the matter of taking care of the rapidly increasing demand for burning oils and Diesel fuel, without accumulating excess supplies of gasoline during the winter, has become extremely important Failure to find a proper solution of this problem . . . . . has been accountable for the present heavy gasoline stocks . . . . . OIL AND GAS JOURNAL, *January 13, 1938*

DUBBSCRACKING is the proper solution of the problem because you can run Dubbscracking units to suit the seasons—and the market

In summer you crack gas oil and fuel oil and all kinds of oil to make the biggest possible yield of Dubbscracked gasoline

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Or you crack gas oil and fuel oil to make the utmost possible burner oil and the least gasoline—the best of burner oil and the best of gasoline

Summer or winter, Dubbscracked gasoline goes to market when other gasoline goes to storage

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

Pressure Production in the East Texas

THE rate of decline of the reservoir pressure of the East Texas field was accelerated during the year 1937, reviving interest in the relation between the reservoir pressure and the rate of withdrawal from the field, and arousing renewed speculation in regard to the possible future behavior of the reservoir. The subject is one of importance not only to the operators, but to the public as well, due to the possible effects of too precipitate a decline of the pressure both upon lifting costs and upon the ultimate recovery of oil.

The majority of the students of the problem have long since recognized that the reservoir energy has been derived principally from a water drive originating in the Woodbine sand.

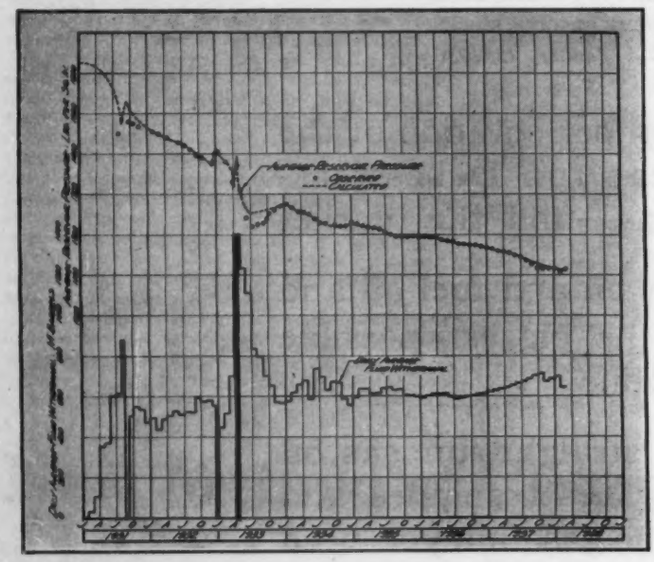


Fig. 1—Reservoir pressure and fluid withdrawal

The energy removed from the reservoir by oil withdrawals is continuously replaced by water encroaching from regions of greater pressure farther west. The reservoir pressure, as a measure of the net energy remaining in the reservoir at any time, depends upon the balance maintained between the rate of energy removal in the form of fluid withdrawal and the rate at which energy is supplied by water influx.

The mechanism of the water encroachment has been explained by Schilthuis and Hurst,[1] who presented a mathematical analysis of the relation between the reservoir pressure and the rate of water influx across the boundaries of the field. A somewhat different mathematical treatment based upon the same fundamental principles was offered by Muskat.[2] The additional data acquired during the time since these analyses were first published have made it possible to evaluate the strength of the water drive to a degree of precision which permits a reliable calculation of the reservoir behavior under any probable condition of operation.

The purpose of this paper is not to elaborate upon the mathematical treatment of the problem nor upon the detailed calculations of the reservoir pressure decline, but rather, with such an analysis as a background, to portray certain readily apparent generalizations concerning the relation between reservoir pressure and rate of withdrawal. Moreover, concerning the effect of water production on the probable future decline of the reservoir pressure, conclusions are drawn which it is hoped may serve to emphasize the importance of restriction of the rate of water production.

[1]Schilthuis and Hurst, "Variations in Reservoir Pressure in the East Texas Field," Trans. A.I.M.E., Vol. 114 (1935).

[2]Muskat, "The Flow of Compressible Fluids Through Porous Media and Some Problems in Heat Conduction," Physics, Vol. 5, p. 71 (1934).

Subsurface samples[3] of the reservoir fluid have shown that the East Texas oil was originally undersaturated with gas, the saturation pressure averaging 740 pounds per square inch gauge at the reservoir temperature. The oil originally existed, however, at a pressure of approximately 1,625 pounds per square inch, measured at 3,300 feet subsea. This excess pressure was hydrostatic, transmitted to the oil by water from the Woodbine sand, the magnitude of the pressure being derived from the differences in elevation between the Woodbine outcrop and the oil reservoir.

Due to the slight compressibility[4] of the undersaturated oil (0.1 per cent per 100 pounds per square inch), it would have been impossible for expansion of the oil in place to have maintained the reservoir pressure above the saturation pressure for longer than the first few months of operation. The production of large quantities of oil with only slight decline in pressure indicated, therefore, the existence of an effective source of energy outside of the oil itself. The only tenable explanation was that the oil was being maintained in a compressed state by the same source from which the pressure was originally derived, that is by the influx of water from the body of the Woodbine sand into the original confines of the oil reservoir.

This situation was fortunate. In the first place, it has made possible the production of large quantities of oil at an economical pressure level and in an efficient manner. In the second place, the laws governing the movement of homogeneous fluids through porous media are sufficiently well known to permit evaluation of the strength of the water drive and to derive still further benefits from its effective control.

In brief, the water moves into the field in the following manner: The water in the Woodbine sand was originally compressed just as the oil in the reservoir was compressed. Although water has a smaller compressibility than has the undersaturated oil, the tremendous quantity of water present is able to expand appreciably with slight pressure reduction. The pressure decline incident to the withdrawal of oil from the reservoir is transmitted to the water outside of the reservoir, causing it to expand and fill the space vacated by the oil. As the expansion, and consequently the volume of water entering the reservoir, is proportional to the pressure decline, it is obvious that a definite relation must exist between the pressure and the rate of water influx. Since this water merely re-

[3]Lindsly, "A Study of Bottom-Hole Samples of East Texas Crude Oil," U. S. Bureau of Mines R.I. 3212 (1933).

A.P.I. —Before Spring Meeting of Division of Production, Fort Worth, Texas, March 24-25

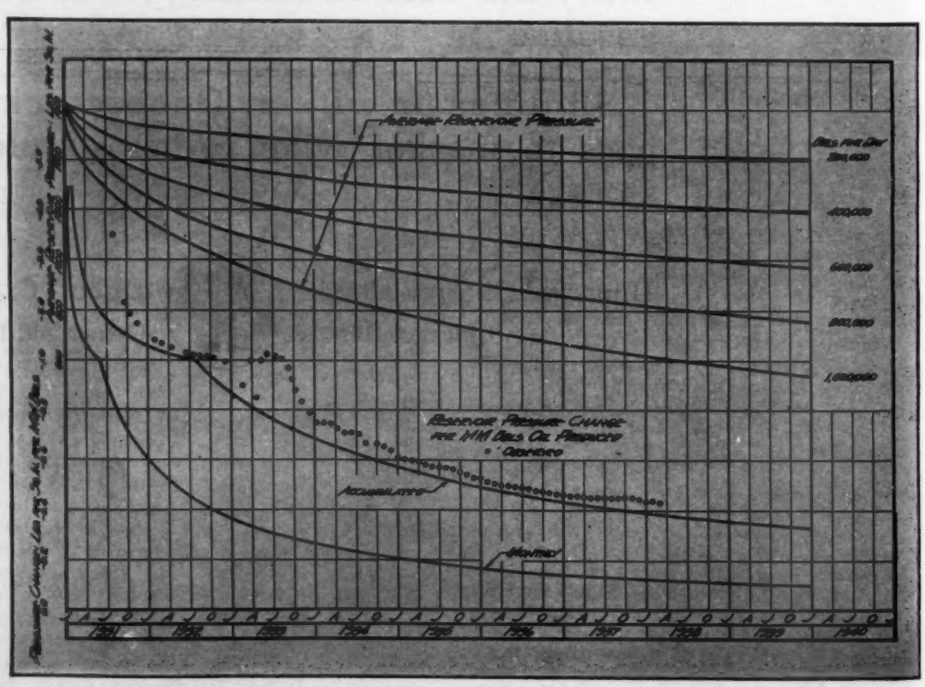


Fig. 2—Calculated change of reservoir pressure with time at constant production rate

Relationship Field

By STUART E. BUCKLEY
Humble Oil & Refining Co.

places the oil, the same relation must link the reservoir pressure with fluid withdrawals. The pressure decline transmitted to the water nearest to the field is in turn transmitted through the water progressively farther out in the sand west of the field, the course of the pressure gradients depending upon the time which they have had to be established. An equation is necessary, therefore, which involves not only rate of withdrawal and the physical characteristics of the sand and of the water but which contains in addition some function of time.

Hurst's[4] equation fulfills these conditions. In its final form, with adjustments made to fit the particular conditions encountered in East Texas, it is:

$$0.4255\,\frac{K}{c}\left[144(P_R-P)\right] = \int_{\log_{10}\frac{\alpha^2\theta_1}{a^2}}^{\log_{10}\frac{\alpha^2\theta}{a^2}} q_R(\theta')\,d\left\{\log_{10}\left[\frac{\alpha^2(\theta-\theta')}{a^2}\right]\right\} - \int_0^1 e^{-\frac{(x'a)^2}{4\alpha^2(\theta-\theta')}}\,dx' + 1.54\,\bar{q}_R\sqrt{\frac{\alpha^2(\theta-\theta_1)}{a^2}}$$

where:

P_R = original reservoir pressure, lbs./sq. in. ga.
P = average reservoir pressure at any time, lbs./sq. in. ga.
q_R = production rate at any time, measured in the reservoir, bbl./day
K = average permeability of Woodbine sand, cu. ft./day/sq. ft./lb./sq. ft./ft.
c = effective compressibility of water in Woodbine sand, cu. ft./cu. ft./ lb./sq. ft.
ϕ = fractional porosity
θ = time, days
α^2 = ratio, $K/\phi c$
a = half length of field, ft.
x = distance along north-south axis of field
$\bar{q}_R$ = constant rate of withdrawal prevailing from θ_1 to θ

The constants c and K were calculated from the recorded data on reservoir pressure and withdrawal from 1932 through 1938 to be 1.1077×10^{-5} cubic foot per cubic foot, per pound, per square foot, and 0.1170 cubic foot per day, per square foot, per pound, per square foot, per foot, respectively. The following values were used for the remaining constants:

$\alpha^2 = 5.2812 \times 10^6$
$a^2 = 1.2295 \times 10^{10}$ sq. ft.
$H = 200$ ft.
$\phi = 0.20$

$$q_R = \frac{\text{bbls. oil per day}}{0.79} + \text{bbls. water per day}$$

Using this equation with the constants given, the reservoir pressure of the East Texas field was calculated from the withdrawals throughout the history of the field. The results are presented graphically in Figure 1, which shows both the observed and calculated pressures and the rate of fluid withdrawal (both oil and water) as measured in the reservoir. The accuracy with which it is possible to calculate the reservoir pressure throughout the irregular production history of the field justifies the concept of the mechanism of the water drive. Moreover, it demonstrates the precision with which it is possible to determine the strength of the water drive and the validity of the equation as a basis both for extrapolation into the future and for portrayal of the possible behavior of the reservoir under rates of withdrawal different from those which have been actually in effect.

The relation between the reservoir pressure and instantaneous withdrawal rate is somewhat complex, the pressure depending not only upon the rate of withdrawal at any particular time but also upon the integrated effect of the entire production history. For example, at a constant rate of production of 400,000 bbls. per day, the pressure may rise or fall, or may rise initially and later fall. depending upon whether the rate of production had been recently restricted or increased. The continuous pressure fluctuations attending changing rates of production are significant in that they are manifestations of shifts in the balance between withdrawal and water influx. The magnitude of these variations can be foretold only through detailed calculations.

The problem may be simplified, however, and removed somewhat from its enshrouding haze of mathematics by a consideration of the pressure decline under the hypothetical condition of constant rate of withdrawal prevailing from the beginning of production. Mathematically, this condition removes withdrawal rate from its position as a variable under the integral and places it outside, leaving merely the time relation as a variable. The equation simply shows then that the total decline from the original reservoir pressure would at any time be directly proportional to the constant production rate which had prevailed up to that time and, therefore, to the total quantity of oil which had been produced up until that time. In other words, the pressure decline per 1,000,000 bbls. of oil produced up to any given time would be independent of the rate of production and be fixed by the time only.

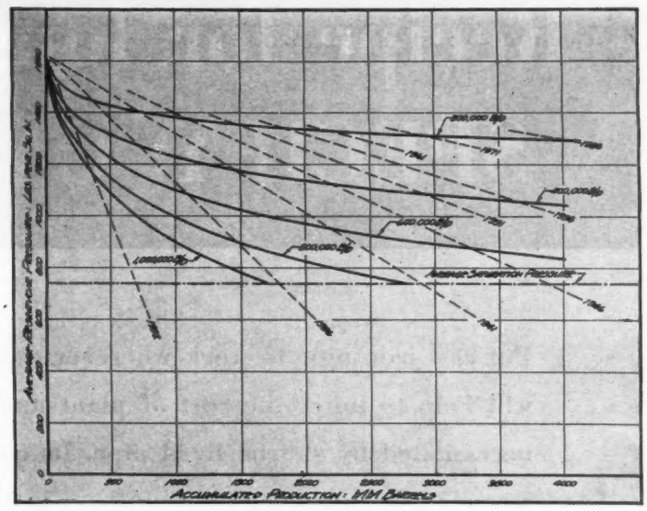


Fig. 3—Calculated reservoir pressure and accumulated production at constant production rate—East Texas field

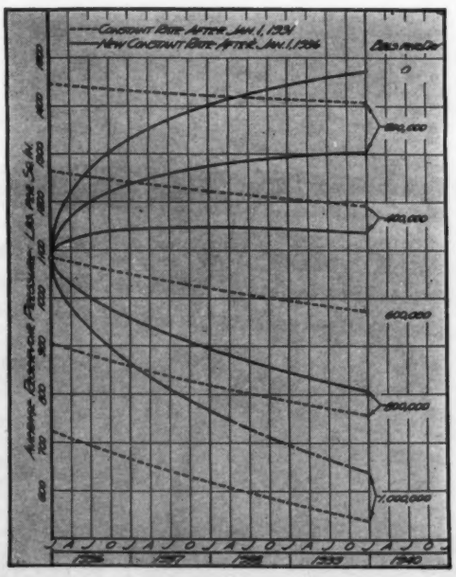


Fig. 4—Calculated effect of variation of production rate on reservoir pressure — East Texas field

The decline of the reservoir pressure with time has been calculated for constant production rates of 200,000, 400,000, 600,000, 800,000 and 1,000,000 bbls. of oil per day with no water production, assuming production at each rate to have begun January 1, 1931. The results are presented in Figure 2, which shows also both the accumulated pressure change per 1,000,000 bbls. of oil produced and the monthly change in pressure per 1,000,000 bbls. of oil produced during the month.

These curves may be considered as the normals toward which the reservoir pressure will trend over any prolonged period of substantially constant rate of production. As such they may serve as a useful approximate guide for estimating the behavior of the reservoir at any time. The degree to which they are approached depends upon how well the various rates at which fluid has been withdrawn will average out at any time. This approach is shown in Figure 2 by the points representing the observed accumulated decline in reservoir pressure per 1,000,000 bbls. of total oil produced. The fluctuations due to variable rate have tended to iron out to such an extent that the observed pressure decline follows closely the trend calculated for constant rate.

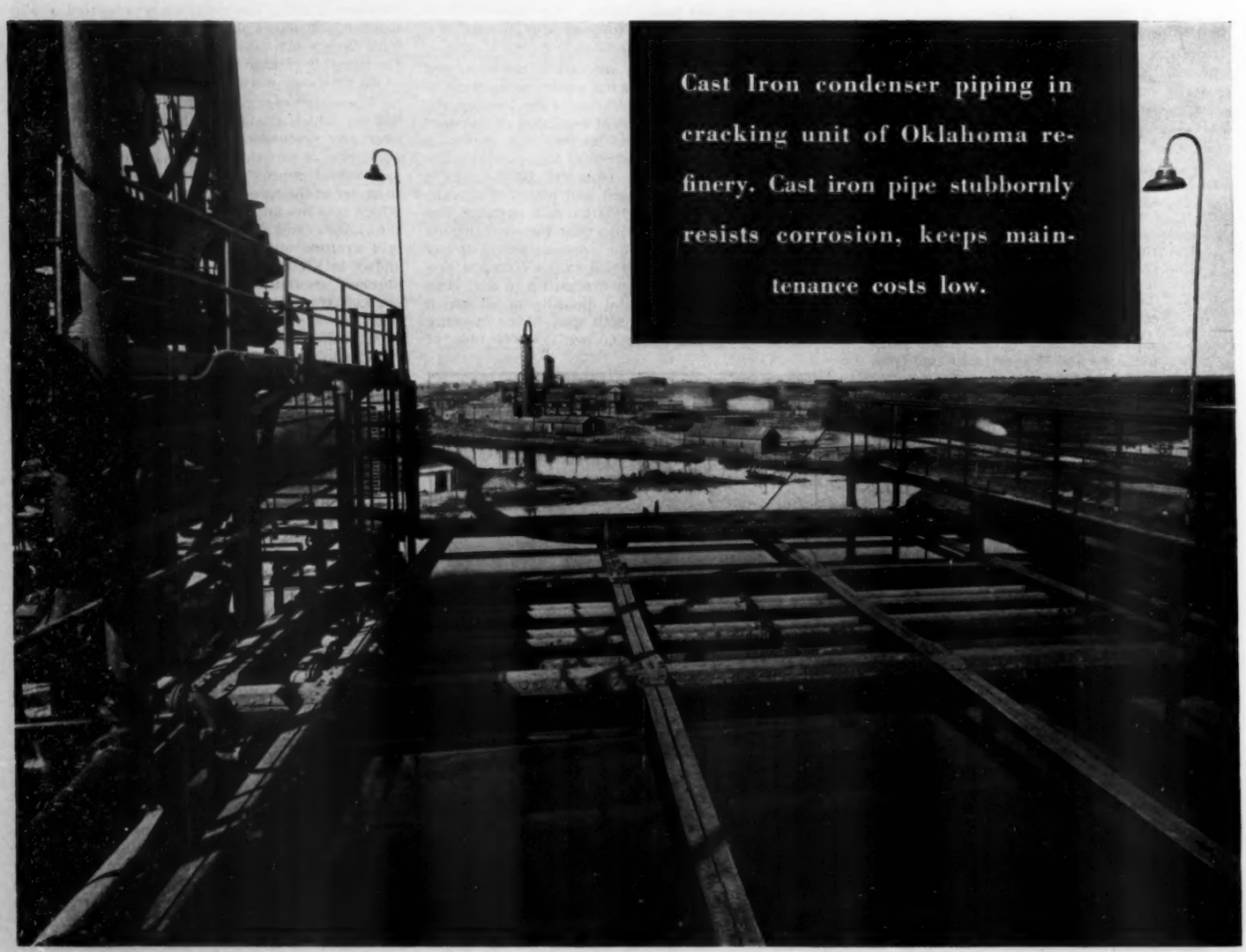
The possibility of producing more oil at a higher average pressure level at lower rates of production is obvious from these curves. For example, at constant rate there would be a decline of 1.3 pounds per square inch for every 1,000,000 bbls. of oil removed during the first year, whereas the decline would have amounted to only 0.3 pound per square inch per 1,000,000 bbls. had 10 years been required for the production of the same quantity of oil. This effect is shown more clearly in Figure 3, in which the calculated average reservoir pressure at various production rates is shown as a function of the accumulated production. At a production rate of 200,000 bbls. per day, it would have been possible to produce all of the estimated ultimate quantity of oil at an average pressure exceeding 1,300 pounds per square inch. Aside from a few in isolated areas, all wells would have flowed until the water percentage became too high, and substantially no free gas would ever have been liberated in the reservoir. Even at a production rate as high as 400,000 bbls. per day, the average reservoir pressure would have remained indefinitely above 1,000 pounds per square inch, resulting in flowing the major part of the ultimate production. At a rate of 1,000,000 bbls. per day, on the other hand, the average pressure would have fallen below 1,000 pounds per square inch at a total production of less than 1,000,000,000 bbls., and substantially the entire field would have been on the pump in 1934.

The effect on the reservoir pressure of a sudden

[4]Schilthuis and Hurst, loc. cit.

Recipe for long-lived pipe lines: SPECIFY CAST IRON PIPE

Put cast iron pipe to work wherever the job calls for stubborn resistance to corrosion. It will help to lower the cost of plant maintenance by saving the expensive replacements necessitated by shorter-lived pipe. Its cost, measured by long service, is low. Its value, if scrapped, is intrinsic. Its usefulness in the modern refinery as a dependable, corrosion-resistant conduit material is increasingly recognized. Cast iron pipe is available in bell-and-spigot, plain and threaded ends, and flanged types, or with bottle-tight mechanical joints. Diameters from 1¼ to 84 inches. For further information write to The Cast Iron Pipe Research Ass'n, Thos. F. Wolfe, Research Engineer, 1015 Peoples Gas Bldg., Chicago, Ill.



Cast Iron condenser piping in cracking unit of Oklahoma refinery. Cast iron pipe stubbornly resists corrosion, keeps maintenance costs low.

change in production rate may be shown by a hypothetical case. It was assumed for illustration that the field had been produced at a constant rate of 600,000 bbls. of oil per day until January 1, 1936, by which time the reservoir pressure would have declined to 1,084 pounds per square inch. The pressures were then calculated for the next four years for rates of production after January 1, 1936, of zero, 200,000, 400,000, 800,000 and 1,000,000 bbls.

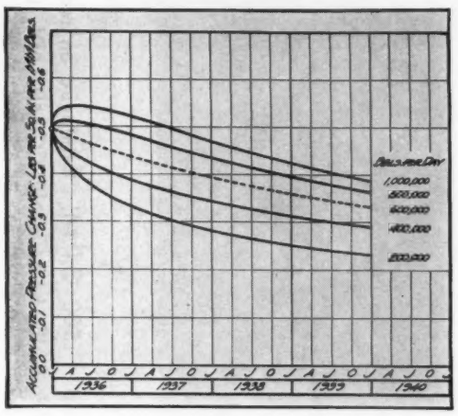


Fig. 5—Calculated effect of variation of production rate on accumulated reservoir pressure changes

per day. The results are presented graphically in Figure 4. The calculations indicated that, under the assumed conditions, if the field had been shut in on January 1, 1936, the pressure would have risen 80 pounds per square inch during the first month following, and a total of 390 pounds per square inch during the following four years. At a rate of 800,000 bbls. per day after January 1, 1936, the pressure would have fallen 30 pounds per square inch during the first month and to approximately 810 pounds per square inch by January 1, 1940. At each rate, the trend would have been toward the normal decline curve calculated for that particular rate under the assumption of constant rate from the beginning of production. These normal decline curves are shown as the light dashed lines in Figure 4.

The return at the new rate of production to the normal decline curve is illustrated in a different manner in Figure 5, which shows the calculated accumulated change in reservoir pressure per 1,000,000 bbls. of total oil produced. At each new rate, the disturbance caused by the sudden change on January 1, 1936, would be quickly ironed out, resulting in an offset in the decline curve, after which it would follow the normal trend (that for constant rate from the beginning of production, illustrated in this case by a continuation of the curve for a rate of 600,000 bbls. per day).

The violent pressure fluctuations immediately following a change in the rate of production are indicated more strikingly in Figure 6, which shows the monthly change in reservoir pressure per 1,000,000 bbls. of oil produced. During the first month following reduction of the rate to 200,000 bbls. per day, the pressure would have risen 8.4 pounds per square inch per 1,000,000 bbls., followed by a gradually decreasing rate of pressure build-up. At 400,000 bbls. per day, the pressure would have risen 2 pounds per square inch per 1,000,000 bbls. during January, 1936, continued its rise at a decreasing rate until November, 1937, and thereafter declined at an accelerating rate. At a rate of 1,000,000 bbls. per day, the pressure would have fallen 1.8 pounds per square inch during January, the rate of change decelerating rapidly as the normal decline curve was approached.

The immediate and sensitive response of the reservoir pressure to change in the rate of withdrawal is readily apparent from these curves. They serve to explain in part the fluctuating course of the observed pressure decline.

Effect of Water Production on Reservoir Pressure

It is possible to calculate the reservoir pressure of the East Texas field at any time because of two facts:

1. The relation between pressure, time, and the rate of water influx across the boundaries of the field has been determined.
2. Due to the slight expansibility of the undersaturated oil, the oil produced is replaced by the water moving in.

Every barrel of water removed from the reservoir must also be replaced by additional water influx from the Woodbine sand to the west. The increased rate of water influx can be obtained only at lower reservoir pressure; therefore the production of water results in additional pressure reduction. The effect of water production on the pressure can be calculated in the same manner as can the effect of oil withdrawal. (Because there is no shrinkage attending the removal of water from the reservoir, 1 bbl. of water is equivalent in displacement as measured in the reservoir to 0.79 bbl. of oil as measured in the stock tank.)

Until the beginning of 1937, the production of water had not been sufficient to materially affect the reservoir pressure decline, the calculated effect on January 1, 1937, being but 15 pounds per square inch. By January 1, 1938, however, the production of water had contributed a total of 40 pounds per square inch to the reservoir pressure decline. The pressure during the year 1937 actually declined a

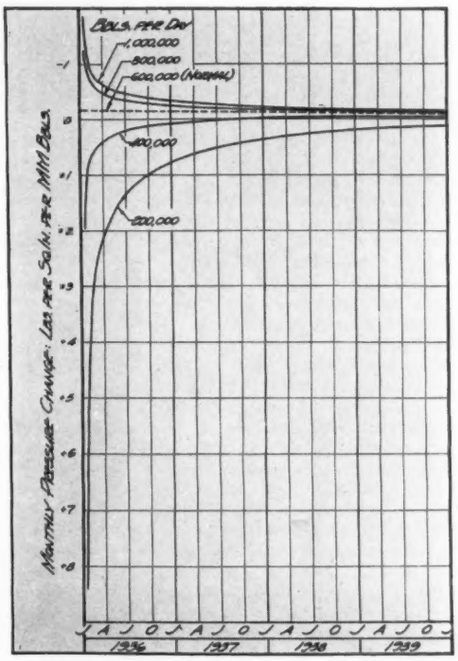


Fig. 6—Calculated effect of variation of production rate on monthly reservoir pressure changes

total of 49 pounds per square inch, whereas the oil withdrawals alone would have reduced it but 24 pounds per square inch.

The rate of water production has increased since June, 1935, in a regular semilogarithmic manner with time. *Should the future rate of increase follow the same trend, then the entire benefits expected to be obtained through restricted rates of oil production are in danger of being obliterated during the next two years.*

Calculations made on the supposition that the rate of water production might increase during the next two years in the manner indicated showed that with a daily oil allowable of 500,000 bbls. after April 1, 1938, the reservoir pressure would decline to 1,030 pounds per square inch by January 1, 1939, and to 870 pounds per square inch by January 1, 1940. Figure 7 shows the supposed rates of water production and the calculated resulting pressure decline. It shows in addition what the pressure decline would be with a daily oil production of 500,000 bbls. if no water were to be produced after April 1, 1938. *It is indicated that the supposed increased rate of water production would lower the pressure more in the next two years than the oil production alone would lower it during the remainder of the life of the field.*

The effect of the water production on the future flowing life of the field is plain. Regardless of the minimum flowing pressure, the rate of pressure decline would be so rapid that substantially no flowing production would be obtained after the first of 1940, at which time the total oil production would be approximately 1,500,000,000 bbls. In the absence of any water production, the reservoir pressure would remain above 1,000 pounds per square inch until January, 1946, by which time a

(Continued on Page 40)

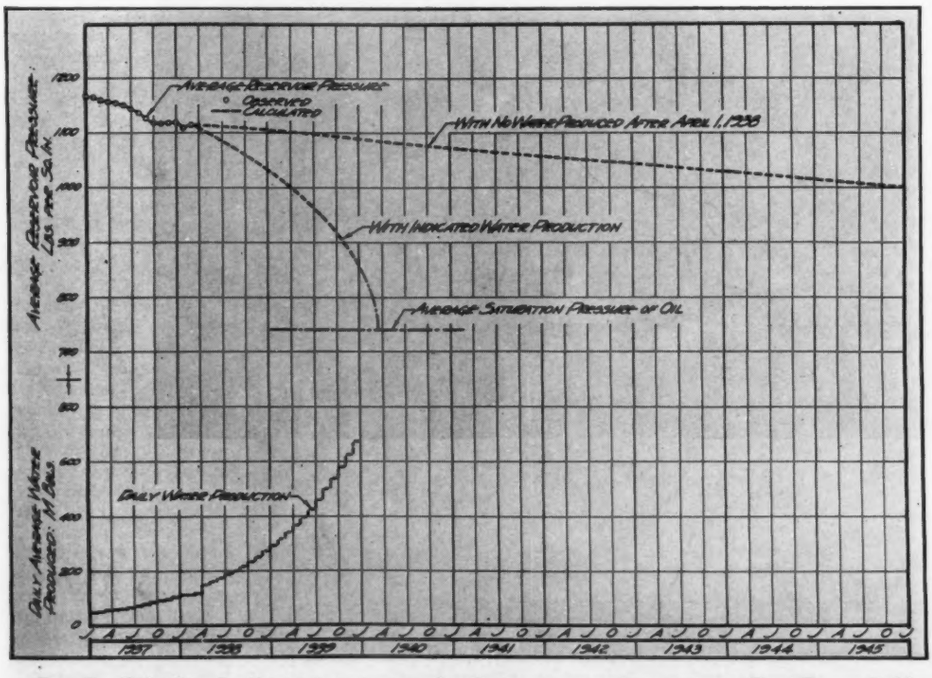


Fig. 7—Calculated effect of water production on reservoir pressure—East Texas field

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NATIONAL TRANSIT PUMP AND MACHINE COMPANY, OIL CITY, PA.

Several Benefits Gained From New Type Well Completion

By T. P. SANDERS

Within the past few months a new type of oil well has come into vogue in the Long Beach harbor area of the Wilmington field. It is the three-in-one well, so-called because it makes it possible to produce three zones simultaneously in one well without mixing the production from the various zones. Only two three-in-one wells are in use at the present time, but there is a greater number of the less complicated two-in-one wells.

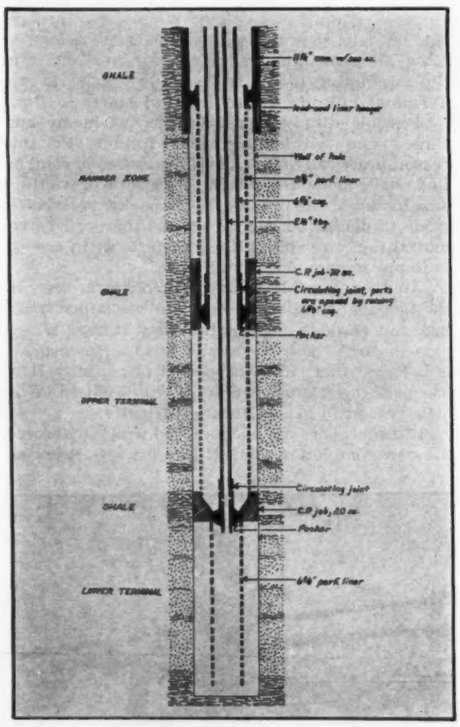
Several advantages are claimed for the new type of completion. To date t' e period of use has been too short to permit comprehensive valuation of the possible advantages and disadvantages. However, it is quite obvious that advantages are derived under some conditions.

Whole-hearted interest has been attracted by the large potentials established by completions of this type. Bankline Oil Co.'s wells on its Union Pacific lease in the harbor area are conspicuously more prolific than the neighboring wells. The company devised the three-in-one completion method, and both wells of this type are situated on its Union Pacific lease. However, well No. 2 on this lease is the largest producer in the field and is a two-in-one completion. Its initial production was 9,600 bbls. per day and it averaged more than 7,000 bbls. per day over a 30-day period from the Upper and Lower Terminal zones. This record was not closely approached by any wells in which both Terminal zones were produced through a common flow string.

While existing evidence proves that greater productivity is being obtained by producing each zone through an individual flow string, comparisons are still too few to exclude the rather remote possibility that field conditions may account for the differences. If it is true that the new completion practice is responsible for the larger potentials, the chief contributing factor must be the manner in which wells of this area are regulated when maximum flow is desired. It is customary to regulate the surface choke for the largest possible flow without causing excessive production of sand. With two zones flowing through the same string of pipe it is necessary to regulate the flow to suit the zone more inclined to produce sand. Under these conditions the zone less inclined toward sand production is required to produce against an unnecessarily high back pressure.

It has been found on Bankline's Union Pacific lease that the Lower Terminal zone will produce against a surface back pressure as low as 220 pounds without excessive sand production, whereas 400 pounds back pressure is required to hold back the sand in the Upper Terminal zone. If the two Terminal zones had been brought in through the same flow string in these wells, the prolific Lower Terminal zone would have had to flow against a 400-pound back pressure, and it stands to reason that the production would have been appreciably smaller.

At the present time production is not being increased by the new completion method because all operators in the harbor area have agreed to limit each well to 2,000 bbls. per day. However, new wells are permitted a few days of capacity flow, and during this period



Well-completion system used by Bankline Oil Co. for flowing three zones simultaneously and keeping the oil of the zones unmixed

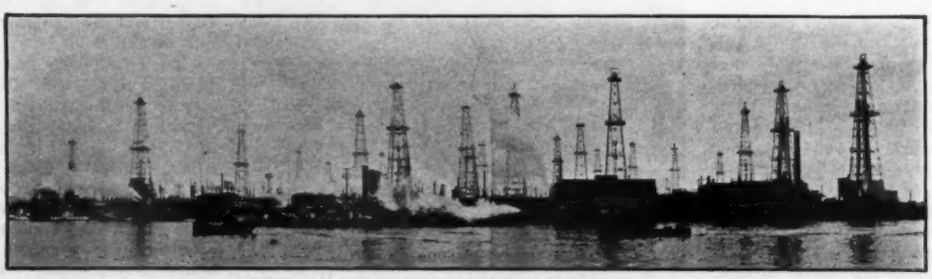
some advantage is derived. A more important advantage exists in the fact that the new-type completion makes it possible to produce only from the zone containing the highest gravity oil. The conventional wells must mix the Upper and Lower Terminal oil, thereby obtaining a 25-gravity combination. But the new type wells are able to take the unmixed Lower Terminal oil, which has a gravity of 28 degrees A.P.I. Since the market price is 9 cents more per barrel, the current income for each well is increased about $180 per day.

The practice of separating two zones in order to produce each independently was first used in the Wilmington field on a Union Pacific well. In drilling this well the Upper Terminal zone was penetrated, then after crossing a fault, it was again penetrated. Since the section on the lower side of the fault was more prolific than the upper section, it was feared that migration would take place through the bore hole. For this reason the well was completed by setting a perforated liner with a blank section opposite the interval between the two productive sections. Cement was placed behind the blank section by forcing it through the perforations. Possibility of water entering the well by way of the fault was eliminated because the blank section covered the fault contact. Before the well was brought on production a packer was run on a string of tubing and set in the blank section so that the lower strata could produce through the tubing while the upper strata produced through the casing.

Because the Union Pacific completion was unusually productive, other operators adopted the same completion method for separating production from the Upper and Lower Terminal zones in wells which penetrated the normal section. Among concerns using this method are Westgate-Greenland Oil Co., General Petroleum Corp., and Bankline Oil Co. The Ranger zone is ordinarily cased off, but Bankline recently adopted the three-zone completion method so that the Ranger production could be obtained during the productive life of the lower zones. By field agreement the Ranger zone is now closed to production, but in case this condition should change the Bankline wells will be able to go on Ranger production at a few minutes' notice. In a field where regulatory measures are uncertain, this is an advantage.

In drilling and equipping a three-zone producer the company cements 275 feet of surface pipe. An 11¼-inch water string is set on top of the Ranger zone at approximately 2,370 feet and cemented with 300 sacks. This water shutoff must be tested under supervision of the California Mining Bureau. The Tar zone, which is a low-gravity productive horizon above the Ranger zone, is cased off behind the water string.

After the cement around the water string has set, the productive strata are drilled to the base of the Lower Terminal zone. The Ranger in this area is about 350 feet thick and is separated from the Upper Terminal by 150 feet of shale. The Upper Terminal averages 440 feet in thickness and is separated from the Lower Terminal by 40 or 50 feet of shale. The Lower Terminal is 550 feet thick, so the wells are drilled to a depth of about 3,890 feet in penetrating the three zones. The oil sand in all of the zones is interbedded with shale, as is typical of California productive strata. (See "Service on

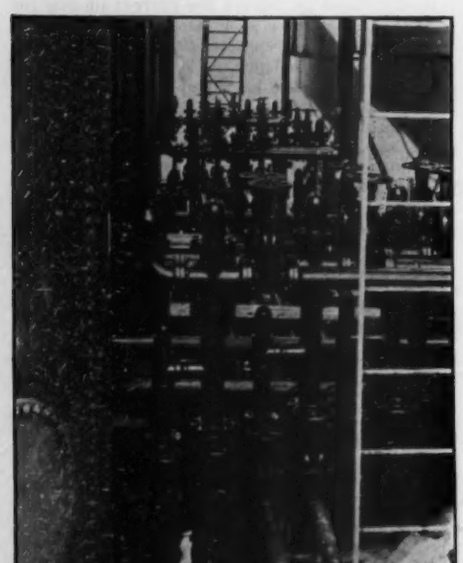


Part of the Long Beach Harbor area of the Wilmington field. The structure is believed to extend several miles into the harbor where drilling is prohibited

Wilmington Field." The Oil and Gas Journal, page 58, November 4, 1937.)

An electric log is taken in the open hole after the zones have been drilled to determine the exact extent of the productive strata. Using these data a long liner is made up with perforations or slot opposite the oil zones and blank sections opposite the shale intervals. Through the Ranger and Upper Terminal this liner is made up of 8⅝-inch casing, but it is belled down to 6⅝-inches for the Lower Terminal zone. The complete liner assembly is hung in the shoe of the 11¼-inch casing by means of a lead-seal liner hanger which packs off between liner and casing.

The next step is placing the cement behind the blank liner sections. This is done with a cement retainer which is run into the hole on tubing and set in the liner just below the blank section to be



Tank fittings on Bankline's Union Pacific lease. The four wells on the lease each use two separators, and the tanks are equipped to gauge production from each separator

cemented. The cement is pumped down the tubing and forced out through the perforations. Drilling fluid in the hole prevents it from going downward outside the liner, so it is forced upward behind the blank section. Cement baskets are used outside of the liner to prevent comingling of cement and drilling fluid. These baskets are installed when the liner is being made up at the surface.

Both three-in-one wells have used 20 sacks for cementing behind the lower blank section and 72 sacks for the upper blank section. At the completion of each job the tubing is backed off from the cement retainer and withdrawn. After sufficient time has been allowed for the cement to set, the retainers are drilled out, since they are made of cast iron.

After the liner has been landed and cemented, a full string of 6⅝-inch casing is run with a packer at the lower end. The packer is set in the blank section between the Ranger and the Upper Terminal. Made up in the casing just above the packer is a circulating joint. This device has ports which are opened by raising the string of casing.

A full string of tubing is also run into the well with a packer which is set in the lower blank liner section between the Upper and Lower Terminal zones. A circulating joint is also installed in the tubing string just above the packer.

The circulating joints permit bringing in each of the zones by the circulating method. The christmastree is provided with packing glands around the tubing and the 6⅝-inch casing. These glands act as stuffing boxes, making it possible to raise and lower the strings of pipe for opening and closing the ports of the circulating joints without dismantling the christmas tree.

In bringing in the three-in-one well after it is equipped so that each zone communicates with the surface through an individual flow channel, the heavy drilling mud is displaced by water pumped down the tubing. Both the tubing and 6⅝-inch casing are raised so that the ports of both circulating joints are open. During the early part of the circulating period the surface flow lines from the 6⅝-inch casing are closed and the lines from the 11¼-inch casing are open. This causes the drilling fluid to be displaced first from the Ranger flow string. When clear-water returns are obtained from the 11¼-inch casing, the pressure of the Ranger zone is sufficient to unload the well and flow starts.

When this occurs the 6⅝-inch casing is lowered to close the ports of the circulating joint and the flow lines for the Upper Terminal zone are opened at the surface. These changes cause the water pumped down the tubing to return to the surface by way of the annulus between the tubing and the 6⅝-inch casing, which is the channel used for Upper Terminal production. When flow through this annulus commences, the tubing is lowered to close the circulating ports at its lower end, and the circulating pump is shut down. The Lower Terminal unloads the tubing and starts to flow.

Possible disadvantages of the two-in-one and three-in-one wells include packer troubles. For this reason practically all of the separated-zone completions have made use of some device for preventing sanding up of the packers. Some packers are being made of drillable material so that they can be removed fairly readily with drilling tools in case it is found impossible to pull them.

Another possible source of trouble is seen in the fact that sand produced from the upper zones may cut through the smaller flow strings which pass through these productive strata. However, it is believed that since the period of capacity flow has passed without trouble of this kind there is little reason to expect future difficulty.

If troubles are not encountered which will force the new completion method into discard, it is reasonable to suppose that many advantages will be found as the field grows older and flowing conditions of the various zones change. It is quite apparent that the chief advantage of the new system lies in its flexibility, which permits changing flowing conditions of each zone to suit changing field conditions.

Christmastree connections on a "three-in-one" well in the Harbor area of the Wilmington field, showing packing glands around tubing and casing

The question naturally arises as to whether or not the additional expense necessary for a new-type completion is justified. Solution of this problem depends on future determination of advantages and disadvantages, but in considering the present outlook it should be remembered that an unusually long flowing life is expected of the harbor-area wells. Not only are the zones thick and prolific, but it appears that a large area is to be drained by these producers. There is fairly convincing evidence that the structure extends several miles out into the outer harbor.

Pressure Production

(Continued from Page 37)

total of approximately 2,600,000,000 bbls. of oil would have been produced, or an additional 1,100,000,000 bbls. after January, 1940. If it be assumed that only 65 per cent of this additional oil obtained at a pressure above 1,000 pounds per square inch would actually flow, there would still be the net loss of having to pump more than 700,000,000 bbls. that could have been produced during the next eight years by natural flow. This loss would result directly from the production during the next two years of a mere 230,000,000 bbls. of water. *Every barrel of water produced would therefore exact a sizable economic toll, neglecting entirely the additional costs which would be entailed to dispose of this water.*

Examined from the standpoint of ultimate recovery, the possible loss resulting from unrestricted water production is even greater. Data have been accumulated which indicate that the flooding efficiency of a water drive may be decreased by as much as 75 per cent even in a perfectly uniform sand if the pressure on the oil be allowed to fall materially below the saturation pressure prior to the advance of the water. In a nonuniform sand, this effect may be even greater. With the supposed rate of water production, the average reservoir pressure will have declined to 740 pounds per square inch, the average saturation pressure of the oil, by early in 1940. Actually, free gas would be evolved in the reservoir on a wide scale at a pressure of approximately 800 pounds per square inch, due to two causes:

1. The average reservoir pressure is referred to a datum plane of 3,300 feet subsea, near the base of the oil zone. The pressure at the top of the oil zone, as much as 100 feet to 200 feet higher on the east side, is around 50 pounds per square inch lower.

2. The eastern part of the field is under a lower than average pressure due to the pressure gradients across the field.

The ultimate recovery from the East Texas field has been variously estimated at between 3,000,000,000 and 4,000,000,000 bbls. With free gas extensively liberated in the reservoir in 1940 at a total production of only 1,500,000,000 bbls., a loss of 25 per cent of the remaining ultimate production would total between 350,000,000 and 625,000,000 bbls., directly attributable to the rate of water production, a quantity of oil greater than the combined total production of the Spindletop, Humble and Powell fields.

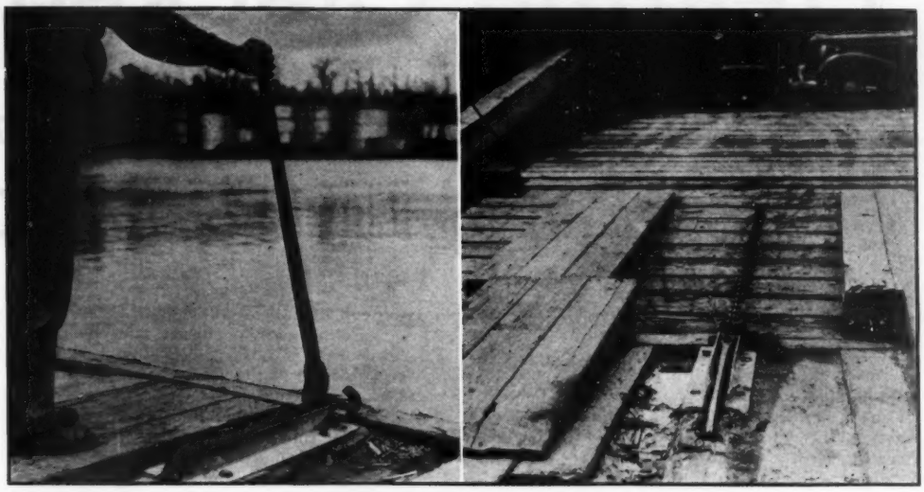
It is by no means certain that the rate of water production will actually increase in the manner chosen for illustration. It is very probable, however, that in the absence of restraint, the rate will actually reach and perhaps surpass 1,000,000 bbls. a day. The only question is one of the time required for it to reach such proportions.

The magnitude of the possible losses resulting from continued water production should focus the attention of every operator in the field on the problem of its restriction. Whatever remedial measures may be undertaken should be inaugurated before damage to the reservoir has progressed to the point at which it will be irreparable.

OPERATING IDEAS

Snubbing Support for Rod Line

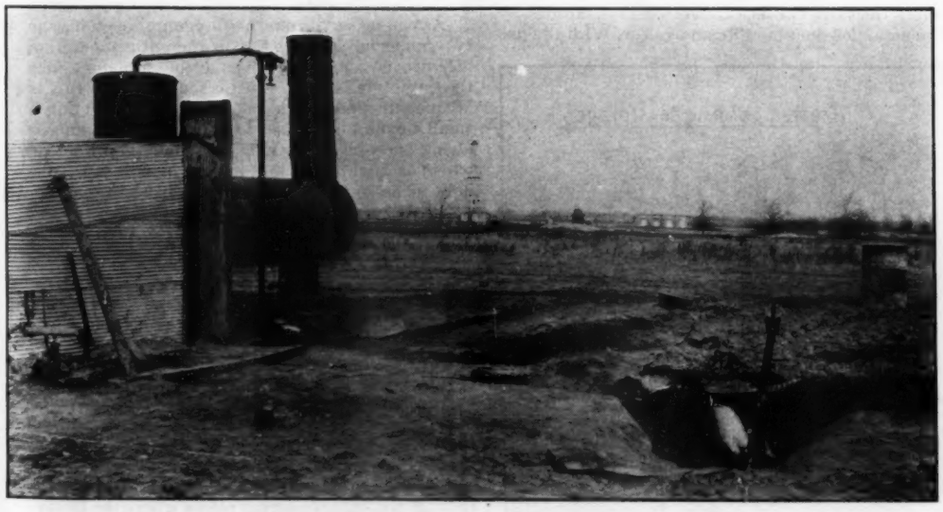
Lateral displacement of the rod line at the power is equal to the stroke, and is evenly distributed on each side of the center of the drive. This side sway of the rod must be absorbed in some manner or crystallization will set in and rupture occur at the point of localization of the stresses so generated. A commonly used method of controlling this angularity is to introduce a second pin and yoke just ahead of the first rod-line support, and to impose upon this support the side strain of such angular displacement. One pumping power near Kilgore in the East Texas field has eliminated the need for an outer bearing by utilizing a rod-line support which permits side slip of the line and thus transmits part of the effect of the angularity to the second support, situated beyond the first carrier by a much greater distance than the length of the first rod. The additional length of rod is under such slight sidewise motion at any point that no appreciable load is carried by the second support. Within the T-headed support is a turned cylinder of hard wood, slightly smaller than the 8-inch pipe forming the horizontal member of the support. Through this wooden piece is cut a 4-inch long slot, just wide enough to permit the rod to work within it. Larger slots are cut into the cross-member, so that the rod may slide freely across the block and, when brought up against the end of the slot, the block itself may slide within the pipe to compensate fully for the side motion. The wooden cylinders show surprisingly long life in service. When the lower side of the block wears, either on the cylinderical surface or within the rod slot, the block may be reversed by unthreading the rod line and turning the block over, thus obtaining bearing life double that of a fixed bearing.



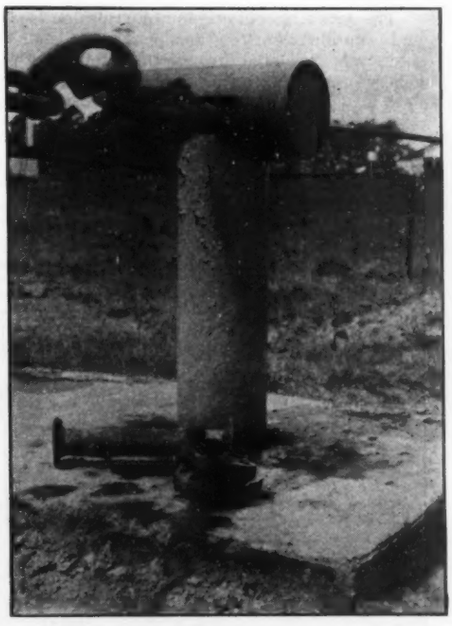
Boomers Used to Moor Louisiana Ferry

When oil field roustabouts and workers on river-going vessels get together to solve mutual problems rather queer mechanical devices are likely to result. One such device is shown in the accompanying cut where an oil field boomer has been rigged up to serve as a means of tying a river ferry used on the Calcasieu River to its landing. Two pieces of channel iron from an oil field derrick have been firmly attached to the deck plank and part of an oil field boomer, usually used to hold loads on trucks, has been pivoted through the angle iron members in such a position as to permit the end of a chain fastened to the dock to be passed through the hook on the boomer. When the boomer handle is forced to the floor the chain is tightened and the boat held snugly. There is one of these devices at each end of the ferry.

Discarded Boiler Used for Treating Oil



In order to keep the oil in the lease tanks warm enough so that a proper test can be made and so that it will flow through the lines one producing company operating in the Clay City field of Illinois has installed the heating unit shown here. The oil is heated in a coil of 2-inch pipe, flowing by gravity from the lease tank. From the heater the oil is passed through a treating unit comprised of an old boiler. The treated oil is then pumped back to the tanks by a small one-cylinder gas engine to complete the cycle.



Treating Cracked Gasoline

By Electrolytic Regenerative Process Employing Sodium Ortho-Plumbate

By
S. C. SMITH
Paluxy Asphalt Co.*

During the past four or five years rapid advancements have been made in the art of sweetening gasoline. Numerous processes have been developed employing worthwhile principles and obtaining commendable results. The process I wish to describe is the electrolytic regenerative method in which sodium ortho-plumbate is the treating agent.

The object of any treating method is the removal of objectionable sulfur compounds. In this method this removal is effected by the use of a compound highly reactive as an oxidizing agent for the purpose specified.

Briefly the physical apparatus of the process consists of a direct-connected motor-generator set, mixing coil, cell box, and settling tank. The motor turns a 300-ampere direct-current generator. This direct current is led to the cell box. The cell box itself is the anode and is made of iron, lead, copper or some other suitable metal. Multiple cathode plates are incased in porous clay jars. The catholyte is caustic soda of about the same Baume gravity as the treating solution. The analyte is the treating solution. It is originally sodium plumbite but when passed through the cell box with the generator running is readily oxidized to sodium ortho-plumbate.

A mixing coil is made up of six 4-inch durion mixing nozzles. A settling tank is provided for separating the finished gasoline and partially spent solution.

The doctor or sodium plumbite solution is made up to contain about 15 grams per liter of lead. This solution is circulated through the cell box with the generator running until the plumbate value rises to about 2 grams per liter. Then raw caustic washed gasoline is pumped with the solution through the mixing coil into the settling tank. From here the sweet gasoline goes to storage and the partially spent solution is returned through the cell box for regeneration of the sodium ortho-plumbate.

The rapidity of the sweetening operation is most amazing. An explanation of this lies in the chemistry of the treatment. Mercaptans are usually changed to the unobjectionable disulfides by the use of sodium plumbite, commonly called "doctor solution" and sulfur according to the following equations:

$$\begin{matrix} RSH \\ RSH \end{matrix} + \begin{matrix} Na \\ Na \end{matrix} PbO_2 = \begin{matrix} RS \\ RS \end{matrix} Pb + 2NaOH$$

$$\begin{matrix} RS \\ RS \end{matrix} Pb + S = 2RS + PbS$$

Another method which has met with reasonable success in the removal of mercaptans from petroleum distillates is based on the reactions of sodium meta-plumbate which may be represented:

$$\begin{matrix} RSH \\ RSH \end{matrix} + \begin{matrix} Na \\ Na \end{matrix} PbO_3 = 2RS + Na_2PbO_2 + H_2O$$

$$\begin{matrix} RSH \\ RSH \end{matrix} + \begin{matrix} Na \\ Na \end{matrix} PbO_2 = \begin{matrix} RS \\ RS \end{matrix} Pb + 2NaOH$$

$$\begin{matrix} RS \\ RS \end{matrix} Pb + S = 2RS + PbS$$

It will be noted that the first two molecules of mercaptans are converted to disulfides by oxidation; the meta-plumbate being reduced to plumbite, while the next two are converted to disulfides by the action of the plumbite and sulfur. With the use of sodium meta-plumbate, electrolytic regeneration is possible and is preferably effected after the meta-plumbate has been reduced to the plumbite.

The method under discussion relates to the use of sodium ortho-plumbate as a treating compound for changing mercaptans into disulfides. This compound possesses many advantages over the meta-plumbate, and comparative tests in treating gasoline have shown the reaction time with ortho-plumbate to be but a small fraction of the time required when meta-plumbate is used.

The reaction between sodium ortho-plumbate and mercaptans may be represented:

$$\begin{matrix} RSH \\ RSH \\ RSH \end{matrix} + \begin{matrix} Na \\ Na \\ Na \\ Na \end{matrix} PbO_4 = 2RS + Na_2PbO_2 + 2NaOH$$

$$\begin{matrix} RSH \\ RSH \end{matrix} + \begin{matrix} Na \\ Na \end{matrix} PbO_2 = \begin{matrix} RS \\ RS \end{matrix} Pb + 2NaOH$$

$$\begin{matrix} RS \\ RS \end{matrix} Pb + S = 2RS + PbS$$

It will be seen that the first two molecules of mercaptans are converted to disulfides by oxidation, as in the case when sodium meta-plumbate is used. However, the time required for this oxidation is appreciably less when the reagent is the ortho-plumbate.

When the spent, or partially spent, ortho-plumbate solution is circulated through the cell box the following reaction occurs:

$$Na_2PbO_2 + 2NaOH = Na_4PbO_4 + H_2$$

As can be seen from the foregoing reactions the only material actually lost in the entire operation is hydrogen which is evolved at the cathodes. Since the catholyte is plain caustic soda solution this is a concentration and is taken care of by adding a small amount of water to the cathode chambers about once or twice every 24 hours. An anode which is slightly soluble in the analyte is preferable in as much as the surface is always clean, which in turn permits the use of a higher current density without forming molecular oxygen.

The two major advantages the process claims over other methods are simplicity and economy.

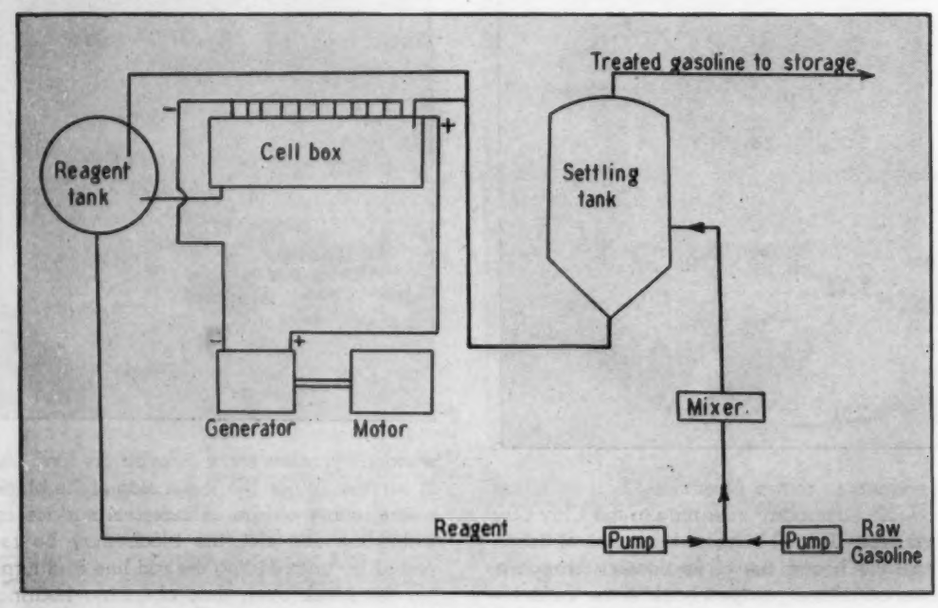
The operation of the unit and quantitative tests are very simple. Actual current consumption when treating East Texas cracked gasoline was 0.024 kilowatts per barrel. Current consumption when treating Smackover cracked gasoline (Cross process) was 0.071 kilowatts per barrel.

The plant herein described has a capacity of from 600 to 800 bbls. per day. When using a copper anode the cell efficiency of 82 per cent was obtained. The iron anode gave a cell efficiency of only 25 per cent. In larger plants where the motor-generator sets are of greater size, no doubt the over-all efficiency would be raised considerably.

Since no sulfur is used in the process, there is no chance of corrosive gasoline, and the lead susceptibility is greatly increased.

Anyone interested in the quantitive determinations developed especially for and used in this process may obtain them from the writer.

*Presented before technical meeting of the Ark-La-Tex division of the Western Petroleum Refiners Association, Kilgore, Tex., March 11, 1938.



Flow diagram for the electrolytic regenerative process

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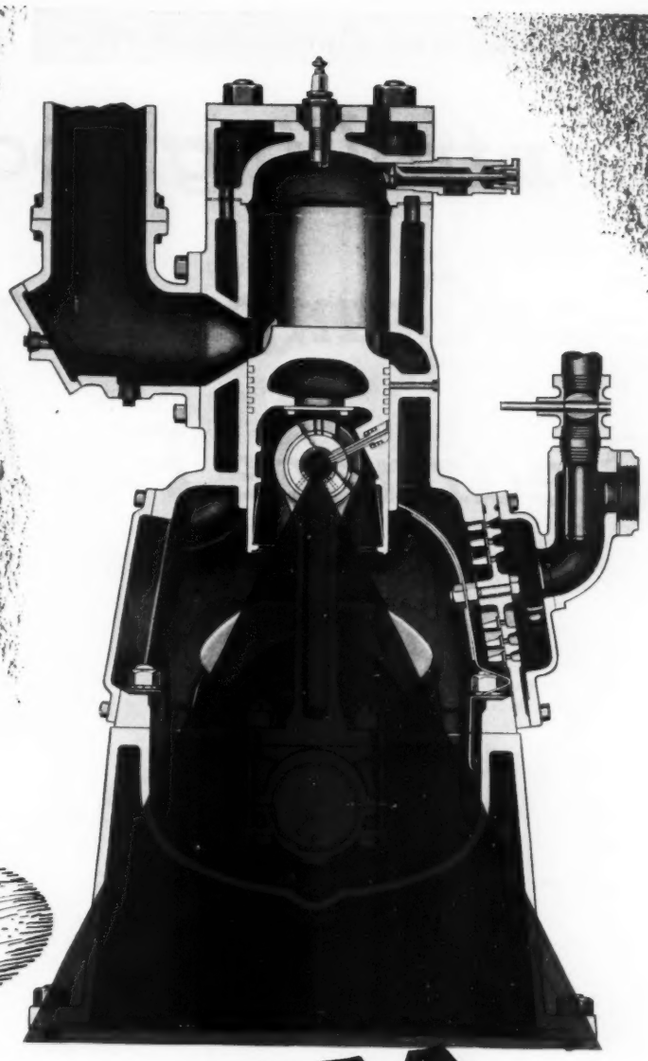

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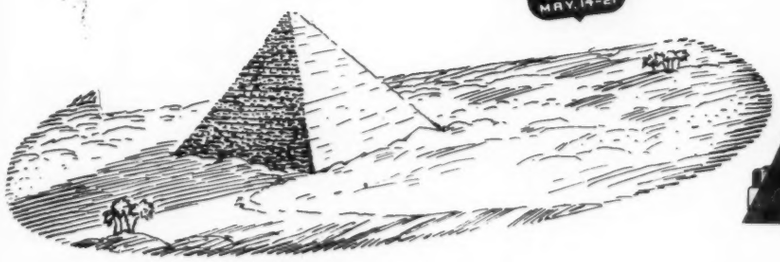
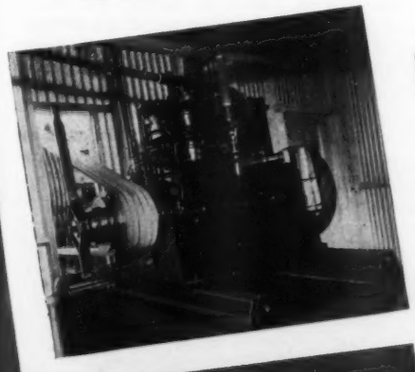


STABILITY



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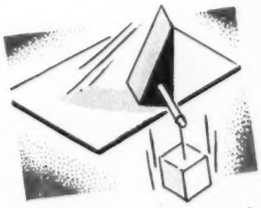
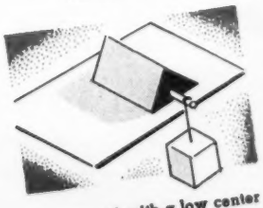


A high narrow structure is easily upset.



A pyramid with a low center of gravity is stable.

Controlling Load on Gas Compressors by Clearance Pockets

By T. HUME WEST
Assistant Chief Engineer, Industrial Fuel Co.*

Compressor cylinders for gas compressor plants are usually chosen with some definite range of intake and discharge pressures in mind. Sometimes later it may be desired to change these pressures beyond this original range, with a resulting increase of horsepower per cylinder beyond the limit of the engine. In this case we either have to buy new cylinders to fit the new pressures, or find some means of unloading the cylinders to a point within the horsepower of the engine. With new cylinders costing several hundred dollars each, a method of unloading the old cylinders at a nominal cost is a happy solution of the problem, especially when the new pressure range may be of only a temporary nature. This unloading can be done by increasing the clearance, and we hope the following explanation will be of value both for determining the proper cylinder size and for unloading cylinders by clearance pockets.

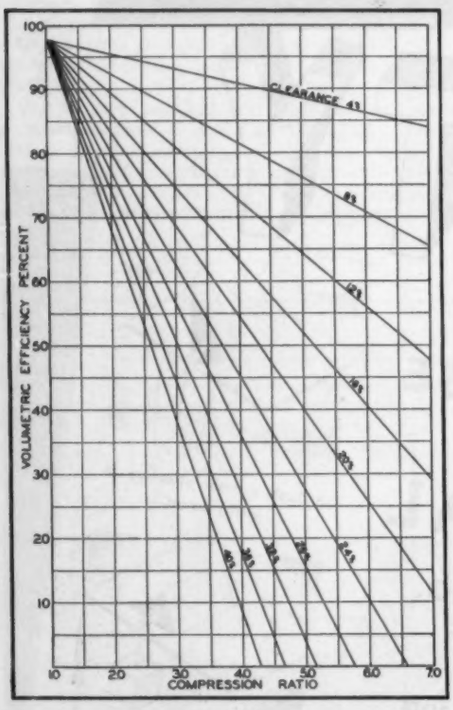


Chart No. 1—Volumetric efficiency. Adapted from C.N.G.A. Dominguez test

*Read before March 10 meeting of California Natural Gasoline Association at Los Angeles, Calif.

First, let us see the effect of clearance on volumetric efficiency. At the end of the piston stroke, the clearance space is filled with gas at the discharge pressure, which, on the intake stroke, must expand and reduce its pressure to that of the intake before the intake valve will open. This delay in opening naturally reduces the quantity of gas taken in to less than that of a full stroke, or in other words, reduces the volumetric efficiency. It will be seen that this delay is prolonged by two factors: clearance, by increasing the quantity of gas to be expanded, and ratio, by increasing the pressure range through which the gas must expand. This effect is shown graphically on the accompanying Chart No. 1, adapted from data compiled by the C.N.G.A. gas engine and compressor committee from actual tests. By following any ratio line down the chart we see that each increase in clearance decreases the volumetric efficiency, and by following any clearance line across the chart, that an increased ratio likewise decreases the volumetric efficiency. Therefore, from this chart we can determine the volumetric efficiency under any given conditions, and by applying this efficiency, E_v, to the displacement, D, of the cylinder, in cubic feet per minute, at the absolute intake pressure, P_1, we can calculate the quantity of gas it will pump per day under the given conditions by the following formula, Q being millions of cubic feet:

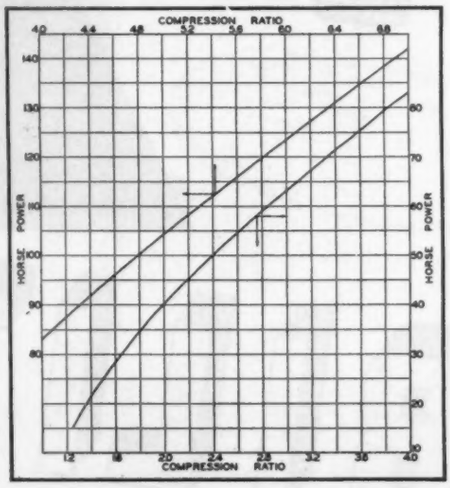


Chart No. 2—Indicated compressor horsepower per million cubic feet per 24 hours. Adopted from gas engine committee's tests at Dominguez

$$Q = \frac{D E_v P_1}{10220}$$

From a gas handbook, or from the accompanying Chart No. 2, also made from data compiled by the C.N.G.A. committee, we can secure the indicated compressor horsepower required to pump a million feet of gas through a given ratio. We should know from the manufacturer's data or from actual indicator tests that with a certain combination of engine and compressor we will have a definite horsepower available at the compressor cylinder. By dividing this horsepower by the horsepower per million at the given ratio we obtain the capacity of the compressor in cubic feet. Now our problem is to choose our cylinders to fit this capacity, or if we already have the cylinders, to see if we can change the clearance to adapt them to this capacity.

To illustrate this let us take a problem and work it out. Assume that we have a two-cylinder compressor with 150 hp. available in the compressor cylinders, and that we wish to pump gas from 25 pounds gauge intake to 125 pounds gauge discharge, or through a compressor ratio of 3½. First, we find on Chart No. 2 that 73.2 hp. is required to pump each million feet of gas through a ratio of 3½. Dividing our 150 available horsepower by this shows we can pump 2,050,000 cubic feet per day with this horsepower. To find our cylinder size let us assume first a cylinder with a reasonably small clearance, such as 2 per cent, so that we will have the widest range through which to increase the clearance and thereby unload the cylinders, if we should so desire in the future. A ratio of 3½ on Chart No. 1 gives us a volumetric efficiency of 95.7 per cent. Therefore, the displacement of both cylinders together must be

$$D = 10220 \frac{2.05}{.957 \times 40} = 548 \text{ cu. ft./min.}$$

or one-half of this for each cylinder. Then we find that an 8¾x20-inch cylinder at 200 r.p.m. has approximately this displacement. If we were buying new cylinders, then this would be the size and clearance required to balance against our available 150 hp.

Suppose, however, we have idle spare cyl-

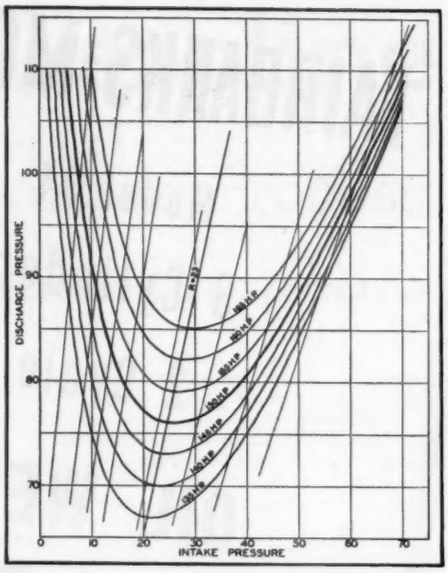


Chart No. 3—Load and capacity curves for 11-inch by 20-inch cylinder at 200 r.p.m., with a 10 per cent clearance

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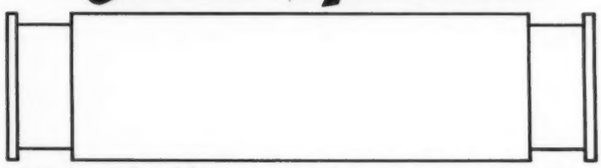

A heavy shoulder is turned on each end of the Center Pin. These shoulders rest in grooves in the Bearing Boxes (welded securely to the Main Beams) so that the Center Pin ties the two 18-inch, 70-pound Main Beams together at the center of the Block. This eliminates any danger of the Beams spreading at this point when the Block is under heavy load.

The Center Pin is full 7-inches in diameter, one inch larger than in similarly rated Blocks. It is forged from alloy steel, carburized and ground.

Frame is tied together at each end with 12-inch, 31.8-pound I-Beams, opposite ends of which are welded to the Main Beams and the other ends bolted, so that the Block may be taken up in three sections if desired.

Bearings are Straight Roller Type, lubricated by Alemite tips.

The Gumbo Buster 7-36 Crown Block is designed for drilling medium depth wells and will safely handle any load within its conservatively rated capacity of 125 tons.

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inders on hand in the 10x20-inch and 11x20-inch sizes. Could we change these to fit this service? The displacement of two 10x20-inch cylinders is 708 cubic feet per minute. However, our capacity is limited by the horsepower available to 531 cubic feet per minute, which is only 75 per cent of this displacement. Therefore, this 75 per cent must be our volumetric efficiency to restrict the horsepower to that available. Chart No. 1 shows at a ratio of 3½ that a clearance of 13 per cent gives this volumetric efficiency, so our clearance must be increased to this amount. Following the same procedure on the 11x20-inch cylinders with

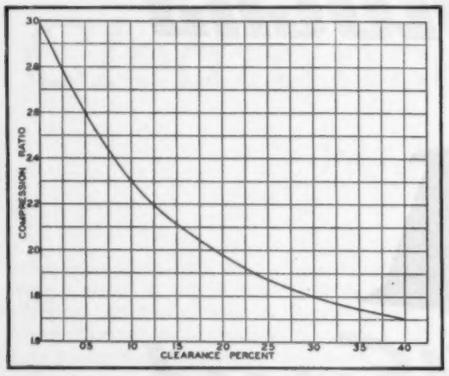

Chart No. 5—Peak location referred to clearance per cent

$$P_2 \text{ (discharge pressure)} = \frac{KR}{E_v \text{ (Ch. 1)} \times \frac{H_2P \text{ (Ch. 2)}}{M}}$$

$$\text{where K (constant)} = \frac{10220 \text{ P (power available)}}{\text{D (piston displacement)}}$$

$$\text{Peak occurs where } \frac{R}{E_v \frac{HP}{M^2}} \text{ is a minimum}$$

their displacement of 862 cubic feet per minute. we find that the capacity is 61.5 per cent of this. and that a clearance of 20 per cent is necessary to give this volumetric efficiency.

Now to increase the clearance on these: First, we must know the normal clearance, either from the factory, probably expressed as a per cent, or from actual measurement, perhaps by measuring the volume of water required to fill the clearance space with the piston set at the end of the stroke. This volume, in cubic inches, divided by the single-stroke displacement, that is, piston area times the stroke, also in cubic inches, gives the per cent of clearance. Suppose in the 10x20-inch cylinder this is 2 per cent and we need 13 per cent to unload it. Then the increased clearance required is the difference between these two—11 per cent of the single-stroke displacement, or 210 cubic inches should be added to each end. Most compressor cylinders, at least those of recent date, have an opening into the compression chamber, ordinarily closed with a pipe plug. If we simply replace this plug with a pocket of the right volume, in this case 210 cubic inches, made of a short nipple on a pipe capped on each end. or perhaps on two welding-caps welded together as a sphere, we then have the required additional clearance. The same thing can be done for the 11x20-inch cylinders, increasing the size of the pockets in the proper amount to fit the required per cent of clearance and the larger displacement. These clearance pockets simply act as reservoirs in and out of which the gas surges on the discharge and intake strokes, thus delaying the opening of the intake valves and thereby lowering the volumetric efficiency, as explained before. By inserting a valve between the cylinder and the pocket the clearance can be controlled at will, the value of which will be shown later. Since the piston-rod generally makes the clearance of the frame end different from that of the head end. the clearance and the pockets should be calculated separately for the two ends, especially on small-bore cylinders.

Suppose now we calculate the performance, plot the curves, and compare these three cylinders at different pressures and ratios, but always at the full load of 150 indicated compression horsepower (hereafter I.C.H.P.). For this we first choose a series of ratios, say from 1½ to 7 in one-half ratio steps, and from Chart No. 2 find the horsepower per million for each of these.

From preceding calculations we know the clearance of each of the cylinders, so taking them one at a time we read from that clearance line on Chart No. 1, the volumetric efficiency at each of our chosen ratios. Since from our quantity formula given previously, we can solve for P_1 if the quantity and other factors are known, we now do this, substituting the proper value of E_v and quantity for each ratio. Multiplying each intake by its corresponding ratio gives the discharge. and repeating this process for each cylinder and then plotting the discharge against the intake gives us three curves such as shown on Chart No. 3.

Each of these curves indicates the various intake and discharge pressures at which that cylinder may operate at the full load of 150 I.C.H.P., and the straight lines radiating from the lower left are constant-ratio and also constant-volume lines through the different pressures. Remembering that the original problem was to find cylinders that would operate under the given conditions of

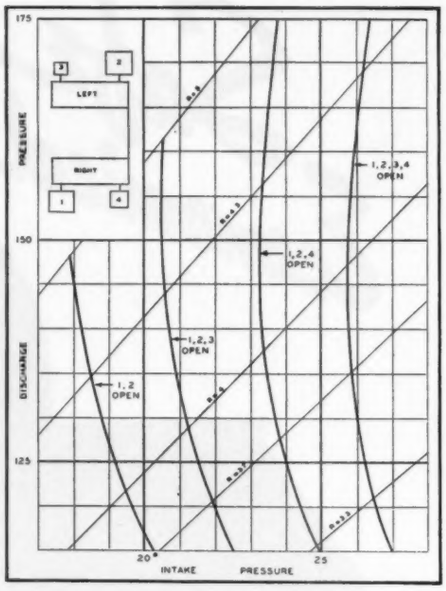

Chart No. 6—Unloading chart for 200-hp. Bessemer FC-1 unit with 10¾-inch by 24-inch cylinders. Clearance 1 and 2 = 21½ per cent; 3 = 9½ per cent; 4 = 17 per cent

25-pound intake and 125-pound discharge, we see that the three curves cross at 25 pounds intake and 124 pounds discharge, missing the desired

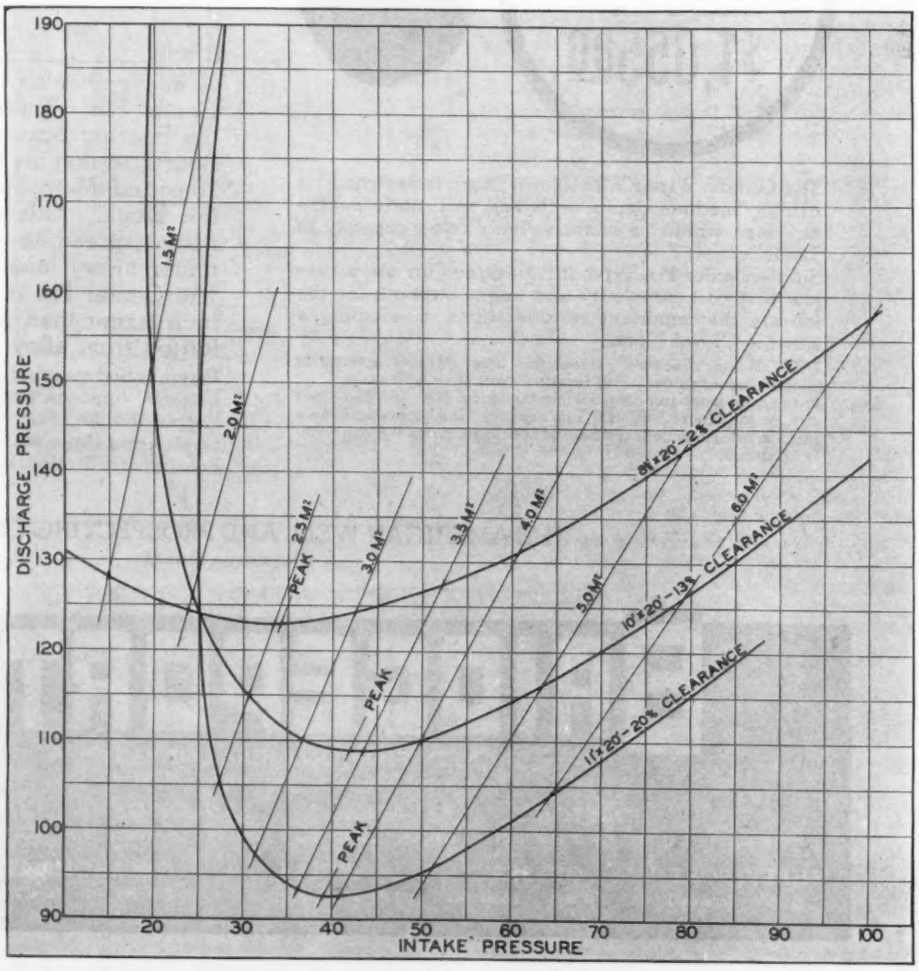

Chart No. 4—Full load curves of compressor cylinders. 150 I.C.H.P. at 200 r.p.m.

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point only 1 pound, and showing that any one of the three cylinders would be suitable for these given conditions. However, they would not be suitable for any other conditions of intake and discharge at the same horsepower unless those conditions fell on the load curve for that particular cylinder. Also, at any other points on the curves the volumes pumped by the three cylinders are not the same except at points on the same quantity line, and therefore, at different pressures. Any other conditions of intake and discharge falling to the upper right of these curves indicate progressively higher horsepowers or overloads, while those falling to the lower left indicate progressively lower horsepowers or underloads.

This feature of these curves can be illustrated interestingly and sometimes very usefully in the following manner: Let us take a 10x20-inch cylinder with 10 per cent clearance as an example and calculate a series of load curves for it, substituting horsepowers ranging from 135 to 165 in 5-hp. steps, as well as the 150 full-load horsepower previously used. If we plot these curves and draw in the ratio lines as before, we find that we have a series of similar, but not identical, curves, such as shown on Chart No. 3. The horsepower loads at the various intake and discharge pressures can then be seen to increase progressively, starting in the lower left area and extending across the full-load curve to the upper right area. These charts are very useful for quickly finding the I.C.H.P. at any time, by simply noting the intake and discharge pressures and reading the corresponding horsepower from such a chart.

A question that is often discussed is that of where the power peak is located, or that point of lowest discharge pressure that requires full-load horsepower. It can be seen from the curve on Chart No. 4 that the peaks for the three different cylinders occur neither at the same intake, the same discharge, nor the same ratio. However, on Chart No. 3, showing the load curves of one cylinder at a fixed clearance, it is seen that all the peaks at the different pressures do occur on the same ratio line. Therefore, these charts show that, contrary to popular belief, the peak does not always occur at the same ratio in different cylinders, unless the clearances are the same. This

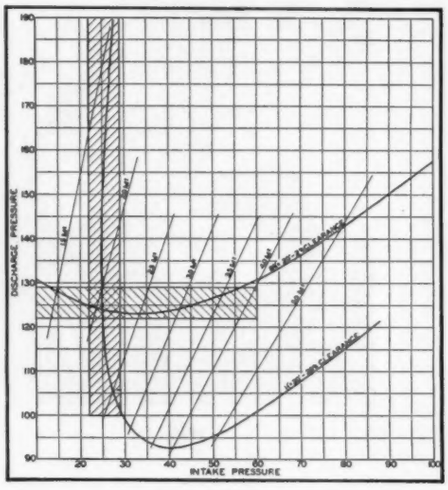


Chart No. 8—Effect of clearance on pressure ranges. 150 I.C.H.P. at 200 r.p.m.

effect of clearance changing the ratio of the peak horsepower can be calculated and the result plotted as shown on Chart No. 5, the formula for the calculation being shown on the chart. This chart shows that as the clearance increases the compression ratio of the peak horsepower decreases. The popular idea that peak horsepower always occurs at the same ratio in all cylinders probably was derived from familiarity only with cylinders having nearly the same clearance.

Calculating Compressor Load

Reference was made previously to the use of valves inserted between the clearance pockets and the cylinders for controlling the clearance at will. Since on a two-cylinder, double-acting compressor there are four clearance pockets, we can, by opening the pockets one at a time, have five steps of clearance, ranging from no pockets to all pockets open. In calculating the compressor load we must, of course, calculate the horsepower on each end of the cylinder with the pocket first closed and then opened. Then by adding together the various possible combinations of these, we can secure the total horsepower of any one of the five steps. By plotting these as before we secure a set of curves such as those shown on Chart No. 7. This chart was made about six years ago for actual use in a plant in which the intake varied from 110 to 225 pounds and the discharge from 300 to 400 pounds. The cylinders used are 7½x16-inch Ingersoll-Rand, with 38 per cent clearance pockets added to the 8 per cent normal clearance in the cylinders. By means of this chart the plant operator has been able to maintain his compressors at almost constant full load regardless of the pressures, simply by consulting the chart and opening the number of pockets shown on the curve nearest the intake and discharge pressures.

Another example of this is shown on Chart No. 6. In this case the ratios and discharge pressures were so far above the normal operating range of the cylinders that operation with no clearance pockets open was impossible. Consequently different-sized pockets were used and

(Continued on Page 56)

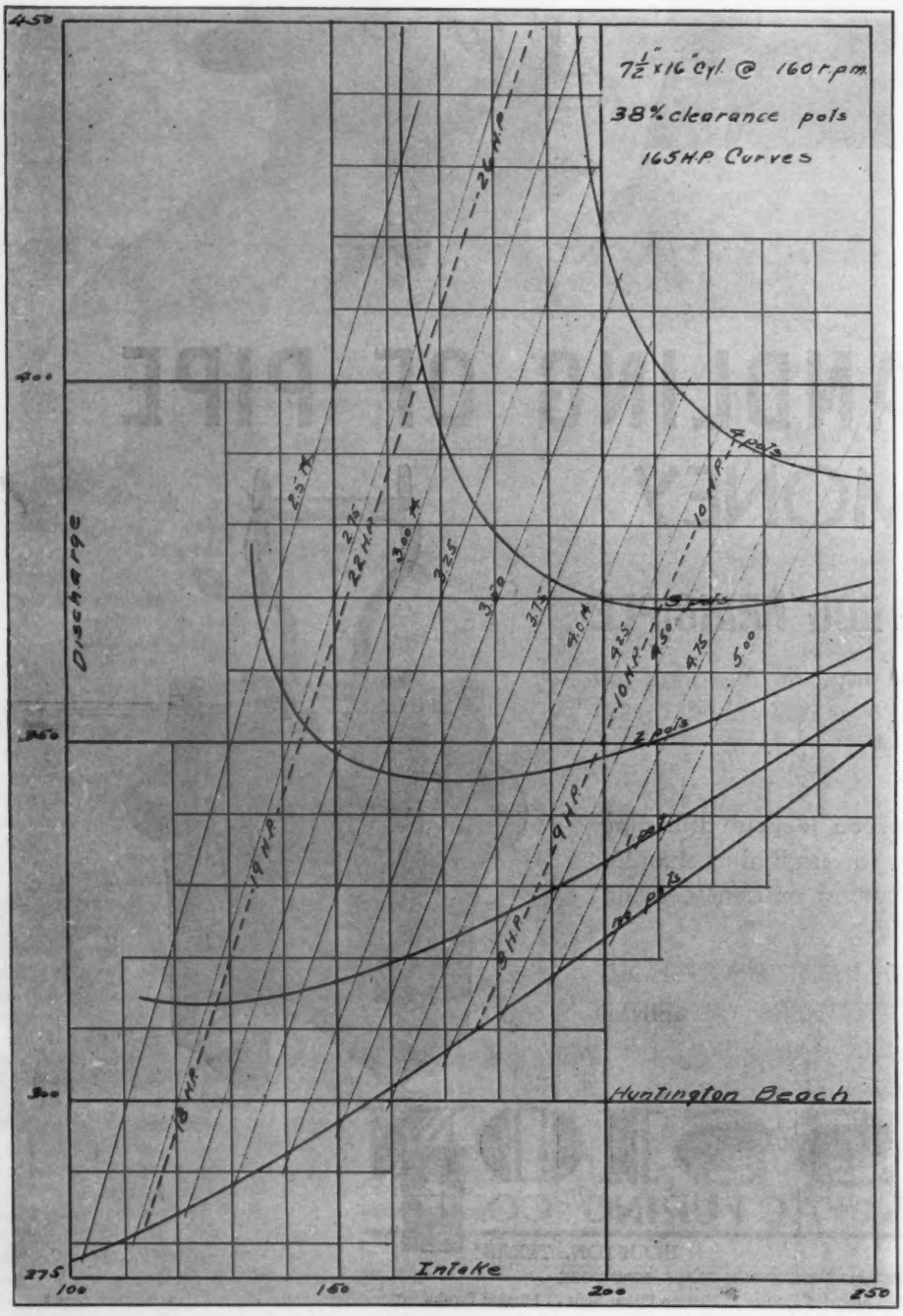


Chart No. 7

IDEAL TYPE "C"

"Reg. U. S. Pat. Off."

POWER DRIVEN

SLUSH PUMPS

● Ideal Type "C" Power Driven Slush Pumps are not only economical and dependable, but they are designed to maintain the high pressure circulation so necessary to present day rapid drilling. Available in three sizes to cover the usual range of rotary drilling requirements.

Model No.	Maximum Liner Size	Stroke	Maximum Working Pressure	Pressure Rating of Full Size Liner	Rated Speed	Rated H. P.	Weight, Pounds
C-150	6¾	12	2000	550	65	150	17000
C-250	7¼	15	2500	710	60	250	28975
C-350	7¾	18	3000	800	55	350	36400

NATIONAL

THE NATIONAL SUPPLY COMPANY

EXECUTIVE OFFICES: PITTSBURGH, PA.

DIVISION OFFICES: FT. WORTH, TEXAS; TULSA, OKLA.; TORRANCE, CALIF.

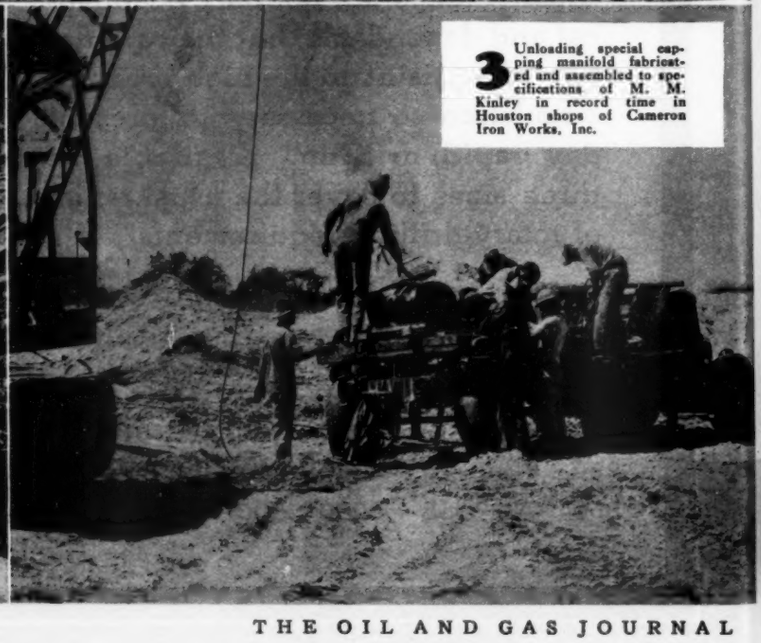
GENERAL SALES OFFICE: TOLEDO, OHIO

IT HAPPENED AGAIN

—This Time at La Blanca!

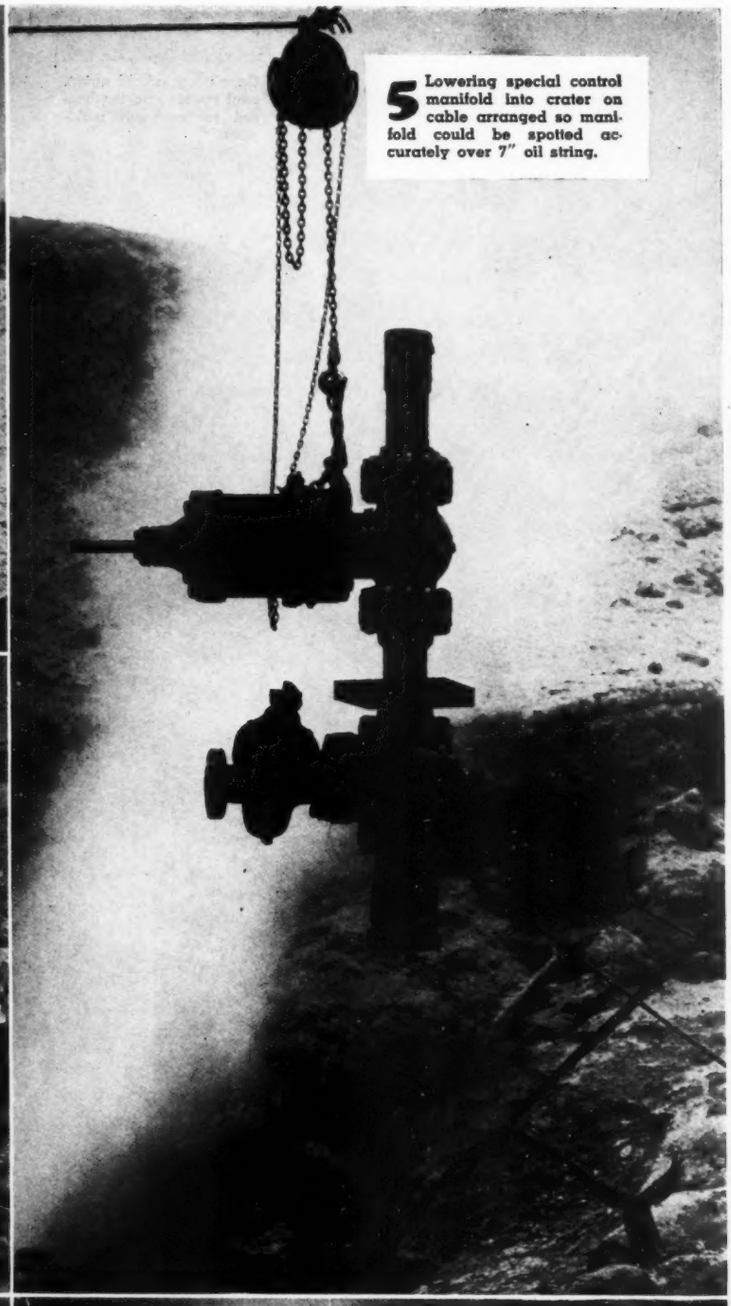
1 Appearance of Davenport No. 1 D. D. Oil Company, La Blanca, Texas, when M. M. Kinley Company contracted to start capping operations, February 22. Estimated volume of well 100,000,000 cubic feet of gas and oil at 2200 pounds closed-in pressure. Depth of crater 70 feet below grade level.

2 Close-up view of bottom of crater, showing 7" oil string projecting above water. Note angle of casing, which greatly increased difficulty of capping.



3 Unloading special capping manifold fabricated and assembled to specifications of M. M. Kinley in record time in Houston shops of Cameron Iron Works, Inc.

4 Assembled manifold, consisting of special Kinley casing head; special three-wing flow cross equipped with 3—4" 6,000-lbs. test W-K-M conduit gate valves; a special flanged tie-down spool; a standard Cameron 7" 6,000-lbs. test Pressure Operated Gate Valve, with flange and nipple above for pipe clamp.



5 Lowering special control manifold into crater on cable arranged so manifold could be spotted accurately over 7" oil string.

6 Manifold being "steered" toward 7" oil string by members of M. M. Kinley crew.

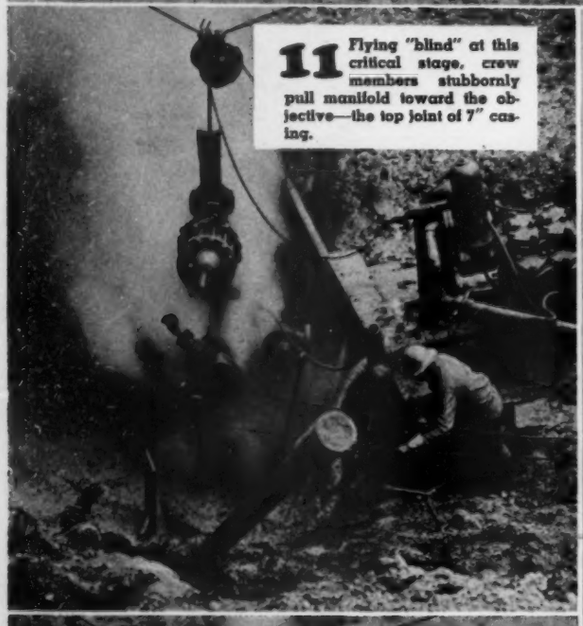
7 Ready to pull manifold down over oil string. Note pull down blocks and cables. Note also two members of crew bracing manifold and lowering it with chain block.

8 "Holding everything" and approaching the critical point in the capping operation.

CONTINUED

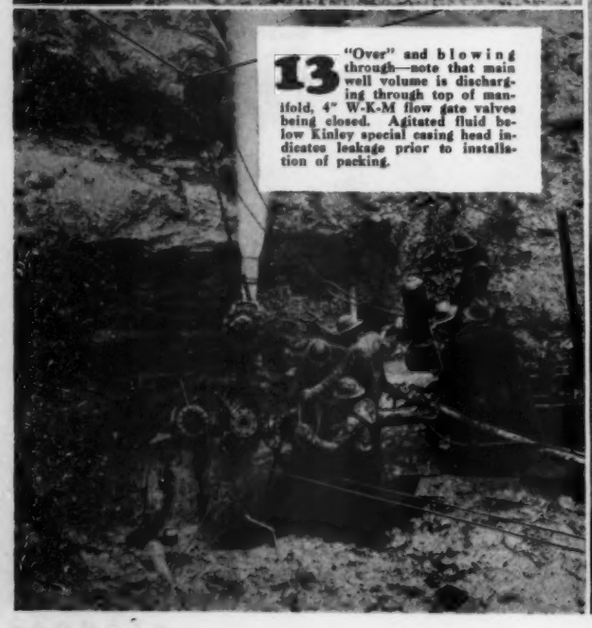
9 Capping manifold enters well stream and the hazard to workmen multiplies.

10 Undaunted by a fog of gas, Kinley crew members continue "lowering-away" and feeling for the top of casing.

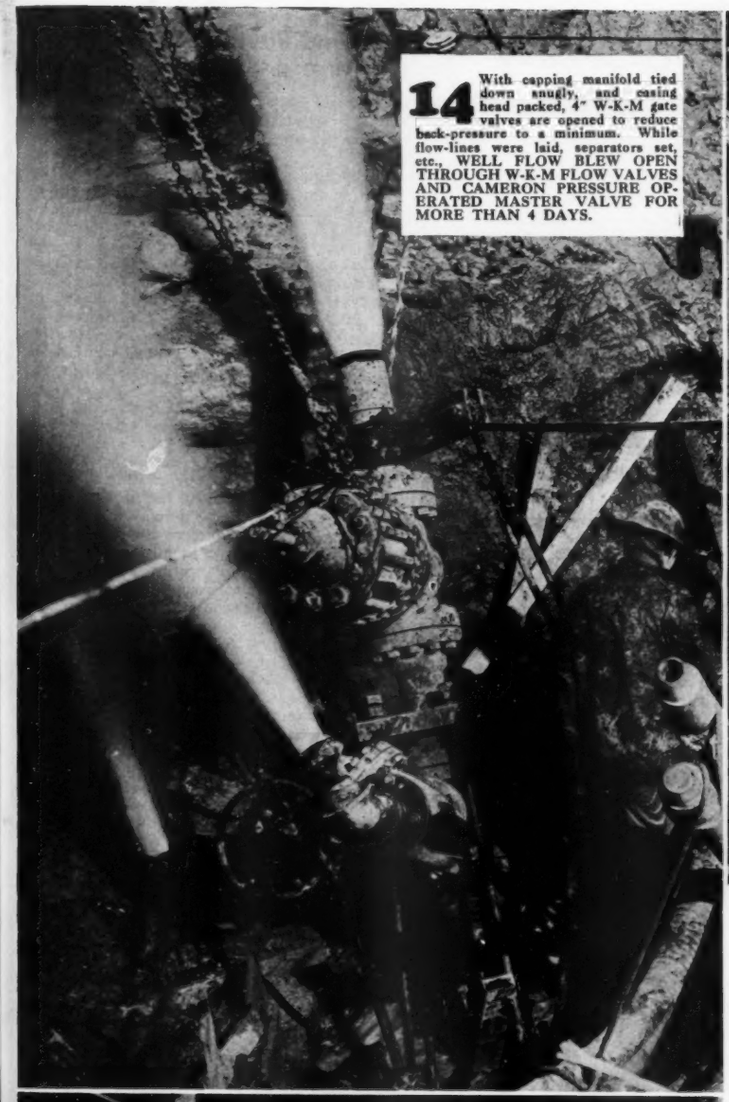


11 Flying "blind" at this critical stage, crew members stubbornly pull manifold toward the objective—the top joint of 7" casing.

12 A daring close-up taken by Harry Pederson, commercial photographer, McAllen, Texas, a few tense moments before success crowned the strategy and efforts of the Kinley crew. The man in the immediate foreground is Floyd Kinley.



13 "Over" and blowing through—note that main well volume is discharging through top of manifold, 4" W-K-M flow gate valves being closed. Agitated fluid below Kinley special casing head indicates leakage prior to installation of packing.



14 With capping manifold tied down snugly, and casing head packed, 4" W-K-M gate valves are opened to reduce back-pressure to a minimum. While flow-lines were laid, separators set, etc., WELL FLOW BLEW OPEN THROUGH W-K-M FLOW VALVES AND CAMERON PRESSURE OPERATED MASTER VALVE FOR MORE THAN 4 DAYS.

16 Under control after 81 days of blowing wild and cratering!

15 Close-up of manifold immediately prior to moment Cameron pressure operated master gate was closed. Note that flow valves have been connected to 4" lines to separators.

The obvious lesson to be drawn from the prompt and successful capping of Davenport No. 1, La Blanca, Texas, as well as No. 1 Bayshore Farms, Palacios, Texas, on January 12, 1938, is that equipment designed to withstand substantial cutting action and still seal off tightly is worth whatever it costs in a capping manifold built to specific requirements. It is also obvious that extensive and versatile shop facilities, and men experienced in fabricating and assembling special manifolds quickly, are indispensable factors in getting the job done promptly, correctly and satisfactorily. Cameron Iron Works, Inc., invites operators who require assistance in emergencies to make full use of its facilities and experience.

CAMERON IRON WORKS, INC.

711 Milby Street Houston, Texas

(Continued from Page 50)

different combinations of these gave the four quite evenly spaced steps shown. Of course, several more combinations are possible, in fact, about 16 with the proper size pockets, but these four covered the desired range.

If we refer again to Chart No. 4 and analyze the two outer curves, we can see that they have quite different characteristics which might make them valuable for different purposes. For example, if we were pumping from the wells into an absorption plant our discharge might be fairly constant while the intake varied radically. In this case, if we chose the 8¾x20-inch cylinders with small clearance, our pressures could vary anywhere within the shaded portion around that curve on Chart No. 8, and still be reasonably close to full load. On the other hand, if we were pumping out of an absorption plant into a transmission line, the reverse might be the condition, with constant intake and variable discharge. In this case, if we chose the 11x20-inch cylinders and raised the clearance to 20 per cent, our pressures could vary anywhere within the shaded portion on that curve without being too far from full load. Thus we see that although either cylinder would be suitable for the same conditions within a limited range—that is, where the shaded areas and curves cross each other—outside of that area their characteristics are so opposite that each one is entirely unsuited for the operating conditions of the other.

It is such cases as those just given that show the value of knowing the clearance of our cylinders. Not only does this knowledge enable us to choose the best size of cylinders in the first place, but also to control the load by means of clearance pockets if the conditions change, or to adapt other cylinders to that service, and thus perhaps save the cost of new cylinders.

For 40 Days and 40 Nights this well in the LaBlanca, Texas field ran wild. Then we were called to the job. On the fifteenth day the well was under control.

AND AGAIN EXPERIENCE PLUS RESPONSIBILITY PAYS DIVIDENDS!

M. M. KINLEY CO.

HOUSTON, TEXAS

Call Wayside 1221 Night or Day

Road and Paving Materials

One of the important actions approved at the meeting of Committee D-4 on road and paving materials during A.S.T.M. committee week in Rochester, N. Y., March 7 to 11, was the recommendation involving a new method of test for determining the particle size distribution of fine and coarse aggregates using sieves with square openings to be published as tentative. Although the method is also applicable to the use of laboratory screens with round openings it is not intended for use in the sieve analysis of aggregates recovered from bituminous mixtures. This proposed standard was prepared by a joint conference committee representing Committee C-9 on concrete and concrete aggregates and Committee D-4, under the chairmanship of E. F. Kelly, chief, division of tests, U. S. Bureau of Public Roads. It is intended to replace four existing standard methods covering the mechanical analysis of aggregates issued under the A.S.T.M. designations: C 41, D 7, D 18 and D 19.

The subcommittee on tar products presented proposed new tentative specifications for tar which include detailed purchase requirements for 14 grades of tars used in road construction. These comprehensive specifications are intended to replace four existing specifications. The grades of tar covered by the new specifications are intended for use as priming coat; priming coat and surface treatment; surface treatment and road mix; surface treatment, road mix, premix and seal coat; surface treatment, premix, seal coat, penetration and crack filler; surface treatment, road mix and premix, when low-temperature application and quick setting are desired.

As the result of cooperative studies carried on during the year, the committee has prepared several revisions of the tentative method of test for abrasion of coarse aggregate for use of the Los Angeles machine (C 131-37 T). The committee accepted for publication as tentative several proposed revisions in the standard method of test for ductility of bituminous materials (D 113-35) which will be published during the year. The tentative revisions of the standard method of test for softening point of tar products (cube-in-water method) (D 61-24), which have been published during the past year, will be recommended in June for adoption as standard by the society.

Arc Welding Procedure Handbook

The fifth edition of the Procedure Handbook of Arc Welding Design and Practice, published by the Lincoln Electric Co., Cleveland, Ohio, establishes still more firmly the place which this volume has gained in its field. Important changes in the welding technique have made such publication almost imperative. Its 1,012 pages cover every phase of the electric arc welding process. A generous section is devoted to designing for arc welded construction of machinery and structures, with many examples of machinery elements and units and of various forms of structural details applicable to many types of structures. Another section presents typical applications of arc welding in manufacturing, construction and maintenance, which suggest the manifold uses of the process and its possibilities as an industrial tool. Illustrations, graphs and charts help the reader of this work, which has come to be regarded as a textbook. The price is $1.50.

American Chemical Society President Speaks in Tulsa

The Oklahoma Section of the American Chemical Society plans a meeting for April 16, in Tulsa. There will not be an afternoon program. The evening program is to be held in the Chamber of Commerce rooms in the Tulsa Building.

Dinner at 6:30 p.m.; musical program 7:30 p.m.; address by Dr. Frank C. Whitemore, president of the American Chemical Society, subject "Hydrocarbons," at 8 p.m. Doctor Whitemore is dean of chemistry and physics at Pennsylvania State College. He received the 1936 Nichols Medal for outstanding work in chemistry. His chief work has been to clarify and eliminate the guess-work in polymerization reactions. Two years ago Doctor Whitemore published a text book of organic chemistry.

The meeting is open to all chemists, engineers, those interested in chemistry, and their ladies. Reservations for the dinner can be made in writing to Jerry Marshall, Mid-Continent Petroleum Corp. refinery, Tulsa.

Publish Second Edition on Refinery Waste Disposal

A second edition of Section 11 of the booklet, "Disposal of Refinery Wastes," has been published by the American Petroleum Institute's division of refining after preparation by the divisional committee on disposal of refinery wastes and approval by the general committee. The section presents in convenient form information designed to promote the adoption of approved principles and practices for disposing of poisonous, irritant and malodorous gaseous wastes and refinery aerosols.

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Small Diameter Pipe For Water Siphon in Gas Well

I plan to run a 2,000-foot string of three-quarters inch diameter butt-weld pipe into a gas well making about 25,000 feet of gas per day and about 5 gallons of water. I want to use the three-quarters inch string as a siphon and have been advised by some that it does not have sufficient strength to sustain a string 2,000 feet long and would like your opinion on that point as well as how it will work as a siphon to remove the water under the conditions outlined above.—W. E. S.

While you do not clearly state the kind of pipe you propose to run in this 2,000-foot gas well it is assumed that you have in mind using three-quarters inch diameter A.P.I. butt-weld black pipe with 2⅛-inch long couplings weighing about 1.14 pounds per foot.

You are safe in running 2,000 feet of this kind of pipe because with a safety factor of 2½ to 1 4,406 feet of this kind of pipe can be suspended in a hole and it would take more than 12,556 pounds pull to part it. As this string of pipe would weigh only about 5,022 pounds it is easy to assume that to use it as you propose would be quite safe.

It is not so easy to answer the second part of your problem because you do not advise us the well pressure. However, siphons have been made using from three-quarters to 2½-inch diameter pipe and have worked satisfactorily if properly installed.

Possibility of Oil in Northern Indiana

There has been very little drilling done in northern Indiana and such wells as have been drilled were mostly shallow tests and have not gone deep enough to check the possibilities of production from the formations producing in Michigan. However, I believe there are wrinkles or folds along the rim of this bowl which, according to geology, form traps for petroleum accumulation. This territory is also the pinching out zone for such formations as Traverse, Antrim and Berea, producing formations in Michigan. Is this a favorable condition?

We also have another condition which is not so favorable for wildcat drilling. The glacial drift is from 150 to 375 feet thick and presents difficulties in applying geophysics in the search for structure. Is this correct? What is the approximate cost of drilling a well to, say, 2,700 feet which is the approximate depth of the Trenton here, using cable tools and either steam, gasoline or diesel? Is it necessary to have a lease recorded to be fully protected or is this to give notification to prospective buyers of property that a lease has been given? Is this compulsory when the land is not for sale? Underlying the Trenton here we have the St. Peter. Is this formation found in any of the other oil-producing states and what is it called and is it an oil-producing sand or water bearings?—H. L. C.

You place a rather large order in your letter and one that is hard to fill because we do not have detailed information on file here that will answer many of the points raised by you.

However, it is suggested you try to secure a copy of "Oil and Gas Fields of Michigan," by Robert B. Newcombe, Publication 38, Geological Series 32, published by the Department of Conservation, Lansing, Mich. This bulletin should contain much information of interest.

It is understood that the U. S. Geological Survey, in conjunction with the State Geological Survey of Michigan, did considerable work in Michigan during the summer of 1937 with electrical resistivity method and a report is now being prepared. You might write for a copy of that report, which would do much to answer your second question.

In the Bulletin 38 referred to above, Doctor Newcombe states that cable tools wells in Michigan cost from $17,500 to $18,000 to complete to the Dundee lime. As those prices were secured some years ago, it is probable drilling costs in Michigan may be lower now, but for a wildcat test in Indiana they will be minimum and the cost may run up to $25,000.

As the lease is a contract in which each party agrees to do certain things, it would be wise to have it recorded regardless of other conditions. There is always a chance for misunderstanding, especially if the well finds oil, and it is much better for all concerned to follow regular practice in such matters than to take chances. It is not compulsory no more than it is compulsory to record a deed or mortgage to a piece of property.

While not definitely correlated, it is generally accepted by geologists that the Wilcox sand of Oklahoma and the St. Peter sand of the Illinois region are of the same age and were deposited under similar conditions. However, the St. Peter sand has usually been found to be a water sand, while the Wilcox has produced a lot of oil.

Thickness of Oil Film of Water

In a report on Disposal of Refinery Wastes prepared by the American Petroleum Institute committee, it states the thickness of oil film, appearance of film, and the quantity of oil required to form the bright bands of color observed on water surfaces covered with small quantities of oil to be as follows:

Approximate thickness of film (inch)	Appearance	Approximate quantity of oil for film 1 square mile in area (gallons)
0.0000015	Barely visible under most favorable light conditions	25
.0000030	Visible as silvery sheen on surface of water	50
.0000060	First trace of color may be observed	100
.0000120	Bright bands of color are visible	200
.0000400	Colors begin to turn dull	666
.0000800	Colors are much darker	1,332

D. V. Stroop, in a Report on Oil-Pollution Experiments—Behavior of Fuel Oil on the Surface of the Sea, reported that laboratory tests and large-scale tests made at sea indicated that oil films up to 0.0000013 inch thick usually disappeared within five hours where the surface of the water was agitated and that oil films 0.00004 inch thick usually disappeared in less than 24 hours.

Twist In a Long Drill Stem

We will appreciate your giving us any information you can as to the number of complete revolutions or part of one revolution a rotary table would make before the bit began to move at the bottom of an 8,000- to 10,000-foot hole.—(Mrs.) A. K. W.

Your question involves too many unknowns to permit of its being solved by any simple formula.

The formula for torsional stiffness or the angular deflection of hollow shafts might be applied to this problem but it would have to be subject to several exceptions and as the variables might have more definite effect upon the lag of movement of the bit at the bottom of the hole than the known factors the attempt to solve this question by mathematics would really resolve itself into the personal judgment of the person making the calculation.

Part of a drill stem is in compression while part is in tension. There may be friction set up by the stem binding in crooked hole. The weight of the stem upon the face of the bit and the character of the formation to be drilled all would enter into the problem so that it would really be difficult to arrive at any accurate answer to your question.

History of Development of Rotary Outfit

Can you give me a brief description of the first rotary drilling rig and advise as to the date of its development and early use in order that we may settle several small bets on this subject?—W. M. G.

To answer your question about the first rotary. On page 94 of the Diamond Jubilee issue of The Oil and Gas Journal, dated August 23, 1934, you will find a picture of an early rotary and a short history of its development. I hope this issue is available to you but in case it is not the following is a brief resume of the history of the development of this equipment.

M. C. and C. E. Baker, drilling contractors of Yankton, Dakota Territory, are credited with the first use of the principals of rotary drilling in digging water wells in that area in 1882. Black pipe was used for drill pipe and a head of water secured by taking water from an elevated tank. At first attempt was made to remove the cuttings by flow through the inside of the tubing or what is now termed "reverse circulation" but it failed because of lack of pressure applied to the fluid in the hole.

It is further reported the Baker Brothers brought their outfit to Corsicana, Tex., about 1895 where three well drillers, H. G. Johnston, E. H. Aikin, and Charles Rittersbacker, were engaged in drilling water wells and had established a small shop to take care of their equipment and it was to this shop the Baker Brothers took their equipment to have it developed for water well drilling. These men formed a company known as the American Well & Prospecting Co. and built the first rotary outfit to drill an oil well in the Spindletop field, Texas, in 1901. Between 1896 when the company was formed and 1901 the equipment had been tested and developed to the point where it was decided it was suitable for drilling oil wells.

All of the details of this development are in the article referred to and the facts were obtained through a search in the literature in connection with the development of copy for the Diamond Jubilee Number.

Lease on Mortgaged Land

I have some property on which there is a mortgage. I have an offer to lease this property along with other property being assembled for a wildcat drilling block. There is no rental to be paid during the first year on the lease. Can I lease this property for gas and oil exploration without consulting with the mortgage company? All taxes, interest and payments on mortgage have been made.—P. E. T.

It is regular practice to lease land upon which there is a mortgage without consulting the company holding the mortgage if interest, taxes and payments are all paid.

However, it is also common practice to acknowledge in the lease that the land is subject to the terms of a recorded mortgage.

From what you state about your land it is all right for you to make a lease without consulting mortgage company.

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Blending Natural Gasoline For Making Motor Fuel

Will you please suggest some references on the subject of blending natural gasoline with heavier distillates to produce satisfactory fuel for modern automobiles?—J. C. B.

The important influence of natural gasoline as a blending agent is related to its value in improving the properties of the refinery product for use as a motor fuel. The first of these is volatility, which has so much to do with easy starting when warming up a cold engine. The starter must make many revolutions before the first explosion, when the fuel does not easily volatilize. Another improvement obtained by the use of natural gasoline is the increase in octane value. Natural gasolines are naturally low in sulfur, so their addition to a refinery product tends to reduce the sulfur percentage.

The disadvantages to be avoided include—Use of an inferior refinery product such as kerosene or a naphtha—that is, too heavy and unsuitable distilling range. The natural gasoline should not have a vapor pressure in excess of the requirements for the proportion used and the climatic conditions at point of consumption. The natural gasoline manufacturer will furnish analyses showing the properties, which should include—gravity, distillation, vapor pressure, octane rating, gum content, sulfur percentage, corrosion test, color, acidity or alkalinity of the distillation residue.

The equipment for blending should be adequate to effect a thorough mixing. It is usually sufficient to place both liquids in a tank then recirculate, preferably delivering the liquid, near the bottom of the tank, through a perforated spider.

Seasonal conditions are considered in the following specifications for the blended product.

VOLATILITY SPECIFICATIONS FOR SEASONAL MOTOR NATURAL GASOLINES

Grade—	Min. % evap. at 212° F.	Maximum Reid vapor pressure Northern*	Central	Southern†
Summer	40	9 25	8 50	8 00
Transitional to and from summer	47	10 50	9 75	9 25
Transitional to and from winter	54	11 75	11 00	10 50
Winter	61	13 00	12 25	11 75

*North of 43° latitude. †South of 37° latitude.

It has been demonstrated that the ideal foundation refinery stock should have a low vapor pressure, preferably under 6.5 pounds, with 20 to 25 per cent distilling at 212° F., 90 per cent off at 392° F. and an octane number above 50. If high boiling naphthas are used it is almost impossible to obtain a motor fuel which will meet the federal specifications, covering distillation and the octane values are low.

The table shows the per cent of natural gasoline necessary to incorporate in finished blends to attain definite degrees of useful volatility in the finished product with a wide range of refinery stocks. Suppose a refinery stock has been selected, which has 20 per cent evaporated at 212° F. (A.S.T.M. distillation) and it is desired to make a finished product having 50 per cent evaporated at 212° F. Reading across on the 50 per cent line and down in the 20 per cent column it is seen that 42.7 per cent natural gasoline must be used.

The Reid vapor pressure of natural gasoline is the most important characteristic from the blender's viewpoint. However, the commercial grading system for natural gasolines includes another volatility factor, namely the per cent evaporated at 140° F. The following table shows the range in these qualities for the most frequent of the commercial grades:

COMMERCIAL GRADES OF NATURAL GASOLINE

Grade—	Reid vapor pressure Max.	Min.	A.S.T.M. % evap. at 140° F. Max.	Min.
26-55	26	22 1	69 9	55
26-70	26	22 1	None	70
22-55	22	18 1	69 9	55
22-70	22	18 1	None	70
18-40	18	14 1	54 9	40
18-55	18	14 1	69 9	55
18-70	18	14 1	None	70
14-25	14	10 1	39 9	25
14-40	14	10 1	54 9	40
14-55	14	10 1	69 9	55

In addition to the grade specifications outlined in the table, natural gasoline must be:

Doctor sweet.
Noncorrosive (copper strip method).
Color, not less than plus 25 Saybolt.
Not less than 90 per cent evaporated at 275° F.
Endpoint, not higher than 375° F.

Reference: The Natural Gasser, October, 1934.

Specifications For Range Oil

Will you please give me the specifications of the product now quoted on the market as "range oil"? Is it necessary that this be a straightrun product?—G. B. L.

Range oil is the name applied to a high grade quality of kerosene, which is usually a straightrun product fully refined so as to be practically free of odor. The following specifications are used in the Mid-Continent area for kerosene oil of this specific type.

Gravity A.P.I.	42-44
Color	25
Odor	sweet, very slight
Doctor test	sweet
Copper strip test	negative
Endpoint, max.	515° F.
Flash point	150° F.
Burning test 72 hours	good

In some districts an excellent kerosene is available having an A.P.I. gravity around 45. The importance of the color specification is simply an indication of good refining to insure high quality. The odor requirement has a similar relation, with the additional factor that unpleasant odors about the cooking range or heating stove are objectionable.

CHEMICALS FOR THE PETROLEUM INDUSTRY

Ethyl Chloride

Use—Solvent for special preparations.
Form—Colorless liquid.
Formula—C_2H_5Cl.
Specific gravity—0.924.
Melting point— —218° F.
Boiling point—55° F.
Solubility—Most organic solvents.

LIMITATIONS

Acid, max.	Trace
Color, max.	Light yellow
Specific gravity	0.924
Boiling point, max.	56° F.

Object of Reforming and Principles Involved in the Operation

What is the purpose of and the essential principles involved in the reforming operation used in refineries?—A. F. W.

The outstanding problem of the refiner is the production of gasoline of high antiknock value to meet the requirements of the trade as indicated in octane numbers. The cracked gasoline meets the present demand, but there are many straightrun gasolines that have to be improved, either by the addition of tetraethyl lead or by improvement through the reforming operation.

Reforming as first practiced, in relation to hydrocarbons, was for the purpose of improving the heating value of gas made for domestic use. The operation consisted of adding natural gas to artificial gas, the former having a higher calorific value than the latter. The refiner has applied the word to indicate a process in which gas or a light liquid, such as naphtha, is subjected to partial cracking. The resulting products are gas and a liquid more volatile with a higher octane rating than the charging stock.

Stephen Swartz has described, in The Oil and Gas Journal, several types of plants for reforming. The gasoline from the crude oil has an octane value varying from 53 to 57.4, according to endpoint, the lowest endpoint product having the highest octane rating. One type of operation makes use of three towers, with one heat treating coil, to make a product of 65 octane number or better. The operating temperature of the furnace coil is 1,080-1,090° F., the inlet pressure about 300 pounds and the outlet 45 pounds. The comparison between the initial distillation is shown in the table:

PRIMARY AND REFORMING OPERATIONS

Primary—	Per cent
Gasoline 59 gravity octane No. 53 and 413° F. endpoint	.35
Kerosene 42 gravity	6
Gas oil 35 gravity 45° F. pour	24
Fuel oil 22 gravity 95° F. pour	34
Loss	1

Reforming—	Per cent
Gasoline 60 gravity 65 octane No. and 410 endpoint	.60
Kerosene 41 gravity	none
Gas oil 34 gravity 0° F. pour	2
Fuel oil 16 gravity 35° F. pour	26
Fixed gas	10
Loss	2

Costs of this operation are placed at 18 to 25 cents per barrel, when charging 3,000 to 4,000 bbls. a day.

The economics of reforming and treatment with tetraethyl lead was discussed in a paper presented before the Western Petroleum Refiners Association, by W. W. Gary and N. R. Adams, at Hot Springs, Ark., April 26, 1937.

The cracking processes now available may be adapted to reforming.

Reference: Stephen Swartz, "Distillation Equipment to Meet Present Demand for Gasoline of Higher Octane Number," The Oil and Gas Journal, September 15, 1932, page 14.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired postage should be enclosed.

FIELD OPERATIONS

Summarizing the Week's Developments

TEXAS—Twenty-one wells were completed in the K.M.A. field of Wichita and Archer counties, with an aggregate initial production of 17,766 bbls. Recent deep sand discoveries in Archer have led to a general exploration of the county for deep production. Promising tests in northwestern and southern Harris County in the Texas Gulf Coast are holding the attention of operators. A 616-bbl. well in the Eureka Heights gas field has started a drilling campaign for oil. Two wells producing from the 10,000-foot horizon were completed in Brazoria County. In Southwest Texas fields a new sand was found productive in the West Saxet field, Nueces County, the test also extending the field. Cockfield sand production in the Benavides field was extended a half mile.

TEX-LA-ARK AREA—The Kerr-Lynn wildcat east of Magnolia, Columbia County, Arkansas, after a workover, is showing more favorably and is believed to have opened a pool of some importance. The Shuler field in Union County, Arkansas, was extended northerly by a 1,600- and a 1,000-bbl. well. Four other wells in the field were completed. The Lisbon, Louisiana, field was extended in the Lincoln Parish area. A new deep sand well good for 981 bbls. was brought in in the Cotton Valley field in Lincoln Parish. In Coastal Louisiana a regional deep record was made in Jefferson Parish where a test of Stanolind Oil & Gas Co. had reached a depth of 13,000 feet and will go deeper.

KANSAS—The Zenith pool in Township 24-11w, eastern Stafford County, was extended one-fourth mile north and one-fourth mile south, and 11 new tests were started the past week to make it one of the busiest fields in Kansas. A pool opener in section 4-15-12w, Russell County, pumped 945 bbls. of oil naturally in 24 hours. A new area was opened in section 25-22-5w, Reno County.

OKLAHOMA—An Ordovician test was started in section 35-5-5e (Cimarron meridian), north of Boise City in Cimarron, farthest west county in the Oklahoma Panhandle. A wildcat north of Cushing in eastern Payne County was showing as a Wilcox sand pool opener, but completion was delayed by a fishing job. Four oil wells were completed in the north extension of the Oklahoma City field.

CALIFORNIA—Continental Oil Co.'s deep test in Kern County passed the 15,000-foot mark. A well with a potential of 8,000 bbls. a day was completed in the Rio Bravo field. Seven wells were completed in the Wilmington field averaging 2,235 bbls. per well initially.

ILLINOIS—Fifteen oil wells were completed in Clinton, Marion, Richland, Fayette and Jefferson counties, and a dry hole each in Randolph and Coles counties. Twenty-three new operations were started in the state. The Benoist sand in the Centralia and Dix pools is yielding bigger initial producers than in the Patoka pool.

NEW MEXICO—An outpost 1½ miles southeast of production in the Vacuum area, Lea County, was started. Another Vacuum outpost in section 6-17-34, 4 miles northwest of production, was running high structurally. A well on the southeast side of the Vacuum pool was completed, flowing 360 bbls. of oil naturally in six hours.

Completions in All Fields

(Week Ending April 2, 1938)

	Oil	Gas	Dry	Total	1938 total comp. to date	1937 total comp. to date
N. Y., Pa. and W. Va.	66	4	3	73	1,252	1,114
Ohio	13	5	4	22	234	242
Indiana	0	0	0	0	25	27
Kentucky	4	1	3	8	184	28
Illinois	15	0	2	17	175	14
Michigan	6	0	1	7	180	201
Kansas	17	2	5	24	474	521
Oklahoma	15	2	6	23	426	658
Texas:						
North Central Texas	42	2	14	58	696	664
West Texas	44	0	4	48	601	622
Texas Panhandle	5	1	0	6	185	156
East Texas	34	0	0	34	623	516
East Central Texas	4	0	0	4	94	170
East Texas Border	4	0	0	4	41	103
Gulf Coast Texas	20	1	1	22	320	318
Southwest Texas	34	1	5	40	524	852
Total Texas	187	5	24	216	3,084	3,401
North Louisiana	4	3	2	9	152	104
Gulf Coast Louisiana	6	0	3	9	129	121
Total Louisiana	10	3	5	18	281	225
Arkansas	4	0	1	5	52	28
Montana	2	0	1	3	15	24
Wyoming	2	1	2	5	46	26
Colorado	0	0	0	0	1	6
New Mexico	8	0	2	10	151	198
Utah	0	0	0	0	0	0
California	19	1	8	28	356	346
Total United States	368	24	67	459	6,936	7,059
Total previous week	375	28	98	501		
Difference	7	4	31	42		

Outstanding Fields--Highlights

(Week Ending April 2, 1938)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
Hastings	6	9	4	2,202	499	18,869
McCampbell	0	6	0	0	112	5,136
Saxet	4	9	0	0	589	35,110
Benavides	8	8	4	655	167	9,997
East Texas	46	78	34	1,877	24,845	429,700
Talco	2	4	2	452	623	26,700
K.M.A.	76	166	21	17,776	237	9,789
Ector County	20	102	10	15,103	943	30,799
Winkler County	9	22	6	2,461	1,606	36,800
OKLAHOMA						
Fitts-Jesse	2	8	1	1,558	966	63,200
Oklahoma City	2	14	4	3,560	1,061	102,700
KANSAS						
Barton County	6	22	5	1,382	305	11,335
Ellis County	4	22	1	2,402	300	8,110
Rice County	5	25	1	345	1,130	29,140
Russell County	7	45	1	900	1,040	27,560
NEW MEXICO						
Lea County	8	100	8	1,267	1,673	97,710
LA-ARK-TEX						
Rodessa, Ark.	1	10	0	0	72	7,775
Rodessa, La.	1	6	0	0	451	41,655
Rodessa, Tex.	1	21	4	945	412	37,280
Lisbon, La.	2	9	2	1,095	195	10,280
Shuler, Ark.	5	15	4	3,925	37	21,005
MICHIGAN						
Buckeye	2	20	1	150	382	26,179
ILLINOIS						
Central Illinois	27	127	15	2,783	358	26,850
CALIFORNIA						
Wilmington	10	36	7	15,646	426	94,275

Eastern Field Report

By STAFF CORRESPONDENT

Second Summit Hotel Test Is a Commercial Gas Well

PITTSBURGH, Pa., April 4—No depth was added to the test of the Potter Development Co., Snee and others on the Summit Hotel lease on Chestnut Ridge in South Union Township, Fayette County, Pennsylvania. The well is considered completed at 6,768 feet and has gauged 3,500,000 feet of gas per day. It has a shut in pressure of 2,985 pounds. A line is now being run from the No. 1 on this lease to deliver the gas into the line.

Several considerations entered into stopping this test at 6,768 feet in the Onondaga lime without thoroughly testing the structure. In the test on the Indiana Savings and Trust lease on Laurel Ridge in Fairfield Township, Westmoreland County, Pennsylvania, gas was similarly struck in the Onondaga and picked up at intervals, presumably crevices, with a slight showing of salt water in one of the crevices. The test was deepened to the Oriskany sand and two feet in that formation a heavy head of salt water was struck which killed the well and it was abandoned. That possibility exists on the Chestnut Ridge structure which, with cable drilling, makes it an expensive operation to overcome if encountered.

The first gas well on this lease has been turned into the lines for a year and shows little if any depletion during that time although about 12 feet less deep in the chert that the Potter Development Co. well and gauging about 1,300,000 feet a day. Both of these tests are very profitable as they stand, and, if depleted, may later be deepened. As two tests on different structures are now being drilled with rotaries in southwest Pennsylvania, the data from these will have an effect on future exploration of the lower Devonian and Silurian, where commercial gas is present and water possibilities exist.

SOUTHWEST PENNSYLVANIA

In Nottingham Township, Washington County, Keystone Drilling Co. brought in a gas well on the J. M. Balentine farm at a total depth of 1,550 feet and a gauge after shot of 490,000 feet a day. Salt sand was at 1,180-1,267 feet and the Big Injun topped at 1,547 feet.

In Buffalo Township, Washington County, R. M. Duden and others are rigging up to drill on the Antonio Provenzano farm.

Greene County

In Center Township, Greene County, the Carnegie Natural Gas Co. is down 2,620 feet in No. 3 J. H. Orndoff. J. B. Orndoff is drilling at 215 feet in No. 2 G. M. Scott.

In Washington Township, the Equitable Gas Co. is drilling at 2,033 feet in No. 2 Connor. In Greene Township, O. I. Dille and others are down 2,507 feet on the Jacob Livingood farm. In Springhill Township, the Taylor Oil & Gas Trust has reached 2,655 feet in No. 5 John Taylor.

Deep Tests

In Penn Township, Westmoreland County, Peoples Natural Gas Co. was drilling below 420 feet on the John S. Marshall farm on the Grapeville Anticline.

In Allegheny County, South Penn Oil Co. and others are ready to spud on the Fred Backhaus farm in West Deer Township.

In Fayette County, the Greensboro Gas Co. test on the J. R. Thompson farm in Wharton Township, Chestnut Ridge is drilling at 3,550 feet. In North Union Township, Wasson & Co. on the J. H. Sorg farm were drilling at 1,675 feet. In Springhill Township, L. J. Houze and Convex Glass Co. on the Paul Dunham farm were drilling at 150 feet.

SOUTHEAST OHIO

The best completion for the week in southeast Ohio was the test of the Pure Oil Co. on the John Miller farm in the southeast quarter section 10, Jackson Township, Knox County. It was drilled in the Clinton sand to 3,139 feet and produced 12 bbls. the first day before shot and after shot it is estimated good for a 75-bbl. pumper. In the southeast quarter of section 22, same township, H. W. Scott and others completed a test on the Earl Miller farm in the Clinton sand at 2,997 feet which is estimated good for an 8-bbl. pumper

In Athens County, the Kachelmacher Estate completed a second test on the Harry Jackson farm in the southeast quarter of section 10, York Township, in Berea sand at 927 feet. It is a gas well gauging 230,000 feet a day. In section 6, Lee Township, Gibbs Farm Oil & Gas Co. drilled a test on the A. B. Wingett farm through Berea sand to 1,186 feet. It produced one-half barrel the first day after shot and will be abandoned.

In Licking County, Armbuster and Stricker on the James P. Murphy farm in section 15, Perry Township, have a gas well in the Berea sand at 706 feet. It is gauging 75,000 feet a day.

In Morgan County, C. E. Morris and others completed a 2-bbl. well in No. 8 F. H. Tuttle, Lot 1097, Windsor Township, in Peeker sand at 435 feet. On Lot 1136, same township, Keppie and others drilled a dry hole on the Caroline Mills farm through the Second Berea sand to 1,726 feet. In section 30, Marion Township, Penn Construction Co. No. 4 Frank Dawson was completed as a gas well gauging 300,000 feet a day in the Second Berea, total depth 1,591 feet.

In Washington County, Bay & Weppler completed No. 9 Christopher Lauer, Lot 46, Salem Township, in Buell Run sand at 276 feet, a 4-bbl. well after the shot. In Lot 41, same township, David Ripley completed No. 5 in Buell Run sand at 256 feet, a 2-bbl. well after the shot. In Wesley Township, Lot 1150, three miles east of Chesterhill, R. L. Hanlan No. 2 Frank Arnold was dry and abandoned at 410 feet.

WEST VIRGINIA

In Calhoun County, West Virginia, Metz Farm Oil Co. completed No. 5 Peter Metz in Sheridan district in Salt sand at a total depth of 1,810 feet and it is showing for 38 bbls. a day.

In Marion County, Carnegie Natural Gas Co. deepened No. 2 Mary Caseman, Mannington district, to 2,268 feet, Big Injun sand, and it is showing for 486,000 feet a day.

In Ritchie County, A. R. Kelly and others drilled No. 3 fee in Grant district through Injun sand to 1,740 feet and it was dry and abandoned. In Murphy district, Hope Natural Gas Co. deepened No. 4443 on the Newton Douglass farm to 1,907 feet, through Injun sand, and it was also dry and abandoned.

In Roane County, Hope Natural Gas Co. No. 7804 H. D. Howell in Curtis district was dry and is abandoned at 2,556 feet.

In Wirt County, Septer W. Douglass No. 2 Anna C. Tucker in Spring Creek district drilled through Cow Run sand to 722 feet and it was dry and abandoned.

In Wood County, J. C. Leonard and others No. 2 E. E. and A. P. Anderson farm in Union district drilled through Cow Run sand and it was dry.

Oriskany Gas Field

One well was completed in the Oriskany gas field in Kanawha County. In Poca district, West Virginia Gas Corp. had 5,329,000 feet of gas per day in the second test on the O. A. Vandine and others farm at 4,962 feet in the Oriskany sand topped at 4,953 feet. It may be deepened. South Penn Oil Co. is drilling at 2,285 feet in No. 3 S. S. Beane and is fishing at 440 feet in No. 5 T. H. Newhouse.

In Poca district, West Virginia Gas Corp. made a location on the Boyd Castro farm. This company is down 4,550 feet on the John and Sadie Dixon farm.

United Carbon Co. topped Oriskany sand at 4,955 feet on the Eulah Miller and others lease in Poca district, and was drilling at 4,260 feet in the William R. Young test, and at 2,250 feet in the James S. Fisher test. This company is building the rig for the test on the Louisa E. Long farm and making the road to a location on the I. C. Miller farm.

United Fuel Gas Co. is drilling at 3,721 feet in B. A. Sisson No. 4771; at 3,575 feet in Oscar L. Gibson No. 4784; at 1,686 feet in W. H. Sisson No. 4790. This company is building a road to B. B. Milam No. 4794 and W. J. Glass No. 4791 and has part of the material ready for L. E. Edens No. 4769.

Guy B. Ray has the rig up on the Emmett Thaxton farm in Poca district. Mullins Gas Co. has rig up on the Esta Fisher Bonham farm. Joe Rubin is down 800 feet on the Carney Heirs farm. The Pitmar Gas Co. is drilling through Corniferous lime topped at 4,982 feet on the Albert Moore farm. This is one of the more northern tests. Godfrey L. Cabot, Inc. is fishing at 4,998 feet for tools on the G. G. Dawson farm. The Liosag Fuel Co. is down 1,600 feet in No. 1 H. C. Matthews. Glenn Oil & Gas Co. has reached 1,020 feet in No. 2 James A. Haynes. D. H. Stephenson & Co. are drilling at 1,540 feet in No. 1 Rozella Shamblin and others.

In Elk district, the Columbian Carbon Co. is down 2,040 feet in No. 1 Margaret Rayhill and at 240 feet in No. 1 B. F. Jones. Cameron Oil and Gas Co. is drilling at 2,400 feet on the Henry Hansel land.

Deep Tests

The test of the Pittsburgh and West Virginia Gas Co. on the Jesse Chapman farm in Otter district, Clay County, was shot with 30 quarts through the Oriskany sand and showed slightly more than 1,000 feet of gas after shot. It will be plugged back to the Salt sand.

In Ripley district, Jackson County, the Potter Development Co. is running casing to 1,856 feet on the William T. Chancey farm. In Ravenswood district, W. H. Petry has not been able to recover the tools lost at 4,716 feet in the test on the D. O. Curry farm.

In Wood County, the test of the Belmont Quadrangle Co. on the C. D. White farm in Steel district is drilling at 1,250 feet. In Harris district, Potter Development Co. is shut down at 988 feet on the W. H. Orem test.

New Work

In Gilmer County, the McCall Drilling Co. made a location on the Chester and Lillie B. Fling farm in DeKalb district. Massey and Jarvis are down 1,910 feet in the Collins and Weaver test.

In Doddridge County, the Henderson Oil Co. is down 2,015 feet in the Alex Liggett test; W. H. Ahner, drilling at 1,500 feet on the N. J. Cunningham test; Broadwater & Wilson at 2,108 feet with W. F. Squires test. All are in the Central district. In the Skin Creek district, Lewis County, Hope Natural Gas Co. is drilling at 3,600 feet in No. 7790, Amanda Summers farm.

In Pleasants County, W. C. Patterson Oil & Gas Co. made a location on the W. C. Patterson fee in the Washington district. In Jefferson district, S. B. Glenn is moving in to drill on the S. B. Glenn fee. Ward Deem & Co. are down 200 feet in No. 3 Cassie Dye, Washington district.

In Monongalia County, the Philadelphia Oil Co. has a rig up for a test on the Stephen Tennant farm in Clay district, and is drilling at 1,650 feet in No. 5411 on the Della Lemley farm. In Marion County, Hope Natural Gas Co. has rigged up No. 7737, Jacon R. Rice farm.

In Wetzel County, the Manufacturers Light & Heat Co. is down 2,000 feet in the Elizabeth Blatt Heirs test in Proctor district. George Eagon is down 1,700 feet in the W. D. Denham test. In the Sand Hill district, Marshall company, Dague & Ebeling are drilling at 1,200 feet in the C. W. Dague test.

Italy Barters for Crude With Government of Venezuela

A portion of the Venezuelan government's oil royalties may be diverted to Italy under terms of a bartering arrangement with Italy which has arranged to turn over two old cruisers in exchange for crude petroleum.

Implication was left in reports from Rome that the Italian government is working on arrangements to supply Venezuela with naval and mercantile vessels in exchange for a more permanent crude oil supply.

It was also reported that an Italian mission has been named to negotiate oil contracts with Venezuela and Colombia.

Unable to produce within its borders and those of possessions sufficient crude oil and synthetic products to meet internal requirements, it was evident in this country, at least, that Italy will play its bartering string to the limit in arranging for petroleum supplies. The country is in position to supply vessels in exchange for petroleum much easier than it can sacrifice strong currency for purchases in the open market. During 1937, Italy was one of the large importers of crude oil from the United States.

North Louisiana, Arkansas

By GEORGE WEBER

Magnolia Test Encouraging; Large Wells Extend Shuler

SHREVEPORT, La., Apr. 4.—Once more the Magnolia area of southern Arkansas has taken the center of attention in this district, as the wildcat, Kerr-Lynn Oil Co. No. 1 Barnett, shows good indications of being completed as a producer. For several weeks various difficulties have beset operators, and at times the possibility of a field discovery was open to doubt.

Outposts in five different fields in the three states claimed attention in their respective areas. Most important were located on the edges of the Jefferson field of Marion County, Texas, the Shuler and Buckner fields of Arkansas and the Lisbon field of Claiborne Parish, North Louisiana. In addition to these developments, deep tests drilling in the Sugar Creek, Farmersville and Shongaloo were being watched with interest.

Buckner Extension

The Buckner field's first extension since its discovery last fall was pending over the week-end. Standard Oil Co. of Louisiana No. 1 Crone, located in section 8-16-22, northwest of the discovery, was swabbing at latest reports. The 7-inch casing string, which had been lost in the hole, was successfully tested and set at 7,260 feet. The total depth is 7,272 feet. After drilling plugs, the well was washed down with oil, and operators were swabbing for completion.

The success of No. 1 Crone follows the abandonment of two outposts to the southwest of the discovery well, which definitely limit the field in that direction. The Standard Oil Co. moved rig from the No. 1 Bodcaw-Barbara, abandoned in salt water at 7,444 feet, to No. 1 Waters, located in the SE SE section 7-16-22 feet, a west offset to the Standard No. 1 McKean, discovery well of the field.

Kerr-Lynn Well

With important developments in three fields, South Arkansas took first place in interest late in the week. Of primary importance is the Kerr-Lynn wildcat. The test, located in section 14-17-20, east of the town of Magnolia is apparently being completed. Last week, casing was perforated at 11 points between 7,070 and 7,540 feet and cemented in an effort to shut off sulfur water which had prevented earlier completion. Efforts seem to have been successful. Packer was set at 7,630 feet, with bottom of the hole at 7,740 feet. Casing was perforated at 7,646-49 feet. Using a ⅜-inch choke on bottom and a 1½-inch choke at the top, the well came in flowing 21 bbls. per hour through the drill stem. Gravity of the oil is 37.9 degrees corrected, and no water is being produced. Operators permitted the well to flow from 9 o'clock Tuesday night until Thursday night, when drill stem and testing tool was pulled, and tubing run. Successful completion of this Big lime discovery well is of considerable importance to South Arkansas development, located as it is in the trend of the Buckner and Schuler fields, which also produce from the lime.

Shuler Developments

The Shuler field, consistently extended to the north by large producers, is growing in importance by the week. This week, two successive extensions contributed further to its development. Following a southeastern extension to the field, one of the largest producers to date was brought in on the northwest of former production limits. It is Alice Sydney Oil Co. No. 1 Powledge, SE cor. SW SE section 7-18-17. The test, located farther up structure than the field as thus far developed, topped the Jones sand at 7,577 feet, the Big lime at 7,630 feet, and is bottomed at 7,729 feet. Casing was set at 7,721 feet and the well came in making 1,576 bbls. in 23 hours. For the first eight hours it flowed through a ½-inch choke, and was closed in on a ¼-inch choke for the remaining 15 hours of the test. Tubing and casing pressures were recorded at 1,000 pounds. Estimated gas production was 1,500,000 feet.

Four other producers were completed at Shuler during the week, all for large initial gauges. Lion Oil Refining Co. No. 2 Marine Oil Co., section 17-18-17, made 35 bbls. per hour through a ½-inch choke with tubing pressure of 500 pounds, casing pressure of 1,300 pounds and total depth 7,650 feet.

Marine Oil Co. No. 3 Justiss, Lot 7, section 18-18-17, came in making 1,069 bbls. per day on a ½-inch choke with tubing pressure of 700 pounds and casing pressure of 700 pounds. Total depth is 7,610 feet.

Phillips Petroleum Co. No. 1 Marine Oil Co., section 20-18-17, southeast edge of production, made 901 bbls. per day through a 24/64-inch choke, with tubing pressure of 825 pounds, and casing pressure of 1,800 pounds. Total depth is 7,640 feet.

Phillips Petroleum Co. No. 2 Rosen, section 18-18-17, made 1,113 bbls. per day on a ⅝-inch choke with tubing pressure of 890 pounds, casing pressure of 1,220 pounds, and total depth at 7,700 feet.

Village Wildcat

In the vicinity of Village, and east of the Kerr-Lynn well, the Standard Oil Co. of Louisiana No. 1 Phillips, section 15-17-19, cored the Travis Peak and on a drill stem test at 5,320-36 feet showed 2,100 feet of salt water and 60 feet of mud in 20 minutes. The test is drilling ahead.

Jefferson Outpost

In the Marion County sector of the tri-state Rodessa field, a southwest outpost, this week showed interesting results. The Arkansas-Louisiana Gas Co. No. 1 Pitts, in the Charles Lockhart Survey, 3½ miles southwest of the nearest production in Jefferson, tested gas and distillate in the Hill sand at 5,919-51 feet, and oil, mud and brackish water in the Gloyd at 6,041-63 feet. The show of gas and distillate in the Hill sand leads operators to believe that production of oil will be found down structure in that horizon. The testing of oil in the Gloyd below the established water table of that horizon in the field indicates either that the Gloyd is producing from a third and lower section, or that lateral faulting in the area of the outpost complicates the structure. The test is being drilled to the Travis Peak formation.

Rodessa, Texas, Completions

In Cass County, the Bay Oil Co. No. 2 Parker, Crowder Survey, was completed for 30 bbls. per day by heads through an ⅛-inch choke, with a casing pressure of 320 pounds. Total depth is 6,068 feet.

Marion County, or the Jefferson-Lodi section of the field, added three new wells. Dunn & Fisher No. 1 Neilon, Gentry Survey, made 15 bbls. per hour through a 3/16-inch choke, with tubing pressure of 375 pounds and casing pressure of 525 pounds. Total depth is 6,090 feet.

Heyser, Heard and Clardy No. 1 Brantley, Bennington Survey, was completed with no gauge reported, total depth 6,018 feet, and 5½-inch casing set at 5,996 feet.

Phillips Petroleum Co. No. 1 Benefield, Hanks Survey, made 363 bbls. per day on a ¼-inch choke, tubing pressure of 700 pounds, casing pressure of 1,025 pounds, and total depth 6,125 feet.

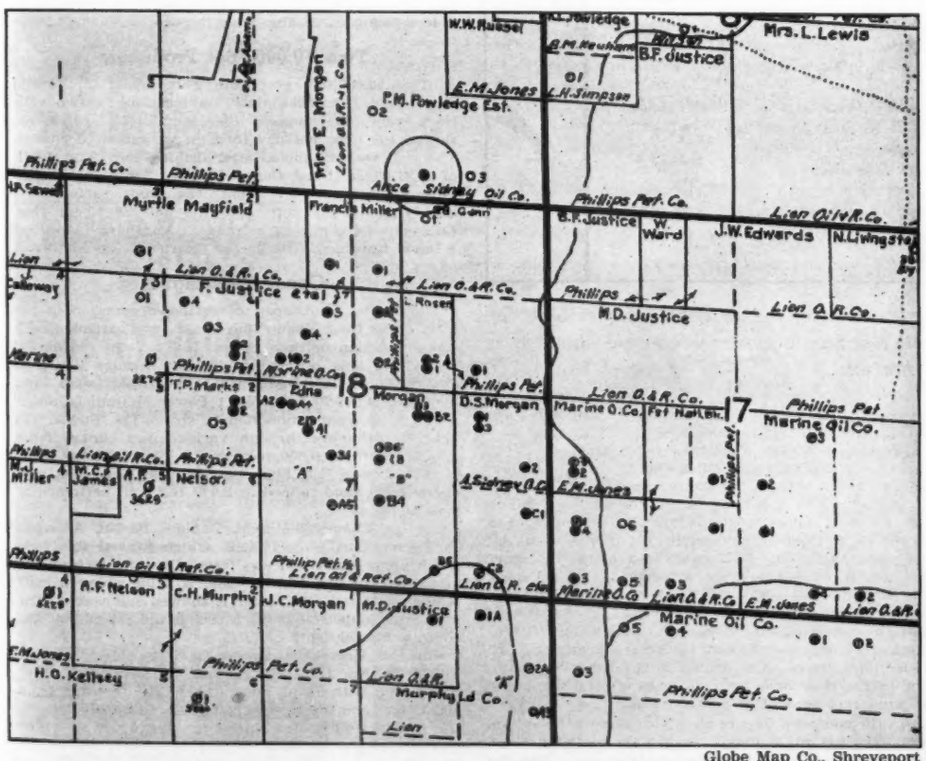
Lisbon Extension

In the Lisbon field of Claiborne and Lincoln parishes, 1-mile southwest outpost well, W. H. North No. 1 Patton Estate, was showing production. The test, in section 11-20-5, cored saturated lime at 5,326-32, 5,333-37 and 5,342-45 feet, has set 5½-inch casing at 5,324 feet and was testing at latest reports. A 2-mile northwest extension test was begun this week. Indications point to greatly increased activity in the Lisbon field for the next few weeks.

During the week two producers were completed in the field. E. O. Heath No. 1-C Patton Estate, section 1-20-5, came in making 30 bbls. per hour on a 1-inch choke, with tubing pressure of 50 pounds. Total depth is 5,370 feet.

In Lincoln Parish, Magnolia Petroleum Co. No. 2 Pollock, section 6-20-4, made 375 bbls. per day through

(Continued on Page 88)



Globe Map Co., Shreveport

Alice Sydney Oil Co. No. 1 Powledge, Shuler field of South Arkansas, extends the production limits and makes one of the largest initial gauges in the field. The structure of the field appears to extend north and west of present development

Texas and Louisiana Gulf

By
NEIL WILLIAMS

Promising Showings in Two Remote Harris County Tests

HOUSTON, Tex., Apr. 4.—Developments in Harris County continue to hold the interest of operators along the Gulf Coast district as preparations are being made to test a wildcat in the Genoa area northeast of the Friendswood field in the southern part of the county, while in the northwestern portion interesting showings have been logged in a wildcat on the old Ogburn Prospect.

West Production Co. No. 1 G. M. Sowden, James Lindsey Survey, Harris County, is believed to have opened a field of major importance as casing was cemented for a production test after logging a thick section of oil sand. The hole is bottomed in salt water sand in the Frio formation at 6,030 feet, and 7-inch casing was cemented at 6,005 feet. The Frio section, showing gas and distillate, was topped at 5,740 feet and cored to 5,852 feet and a 43-foot section of sand, showing oil, was logged at 5,852-95 feet. The salt water level was established at 5,913 feet.

While the saturated section does not compare with that of the Friendswood and Hastings fields, it is thick enough to indicate that the structure may extend over a wide area and high prices are being paid for royalty and leases. E. I. Thompson purchased an undivided half interest in 200 acres of the G. M. Sowden lease for a reported consideration of $40,000 in cash and $100,000 in oil payments. Royalty one-half mile from the well has been sold as high as $1,500 per acre cash and $2,500 per acre in oil. The well was drilled on a farm-out from Stanolind Oil & Gas Co. The majority of the acreage is held in fee by the West Production Co., while protection is held by Humble Oil & Refining Co. and Ohio Oil Co.

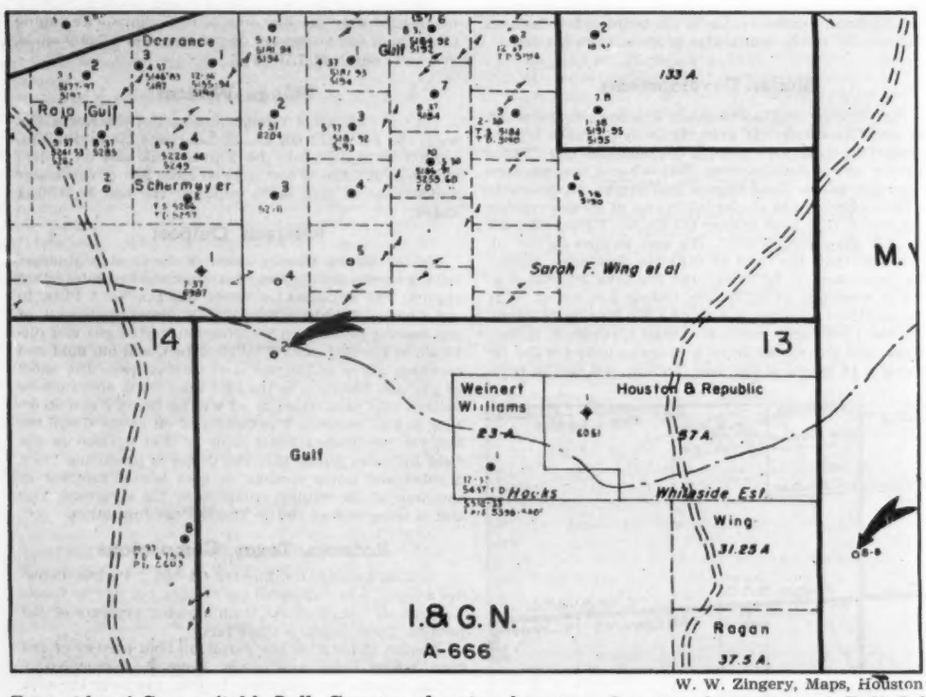
Reports of a showing of oil in the upper Cockfield formation in O. W. Killam No. 1 J. W. Sweeney Estate, G. Williams Survey, northwestern part of Harris County, has attracted much attention. Four feet of sand with an oil odor was recovered at 6,535-45 feet, while from 6,545-50 feet no recovery was made, but the section was logged as sand. The hole is being cored deeper in hopes of finding saturation in th Conroe sand. If this fails, the hole will be plugged back, and a test made in the upper section. Several wells have been drilled in that area and all have logged encouraging showings.

Oil in a Gas Field

The completion last week of Jack Frazier and others No. 1 Vollmer-Neiman, which opened the first oil production in the Eureka Heights gas field, has set off an active drilling campaign. Alamo Drilling Co. and J. C. Means have a rig up for No. 2 Laura Lackner, northeast of a Houston Oil Co. gas well in the H. Reinerman Survey, while Houston Oil Co. is clearing location for No. 2 Helberg, 1,268 feet east of its gas production. On a potential test, the discovery well flowed 616 bbls. of 33.4-gravity oil with tubing pressure 1,100 pounds and casing pressure 1,600 pounds.

Northwest at the Fairbanks field, Amerada Petroleum Corp. and Stanolind Oil & Gas Co. made locations for two wells, both in the George Ayers Survey on the L. M. Day and K. S. Silberg leases, respectively. Moran Gas Co. has staked locations for No. 1 Homery Ley in the G. S. Reid Survey, northwest of the discovery well, and No. 1 Phil E. Davant, west of the discovery in the J. M. Dement Survey. Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 White, one-half mile east of production is being recompleted after it started making approximately 12 per cent salt water. It was originally completed through perforated casing at 6,842-55 feet and flowed an estimated 20 bbls. of oil per hour. The perforations have been squeezed off and the casing is being reperforated at 6,843-55 feet.

In the southern part of the field, about a mile from production, H. E. Williams No. 1 Vaja has been abandoned after the well attempted to blow out when the casing collapsed or split. The well was completed at 5,813-24 feet and was flowing an estimated 6 to 8 bbls. of oil per hour with no salt water. At a hearing before the railroad commission the past week, a 20-acre spacing rule was requested by Amerada Petroleum Corp. and Stanolind Oil & Gas Co. There were some objections to the request and the commission will announce its decision at a later date. It was brought out at the hearing that the saturated section between the gas-oil contact had a thickness of 30 feet at a minus of 6,710 feet and the oil-water contact was found at a minus of 6,740 feet.



W. W. Zingery, Maps, Houston

East side of Segno field, Polk County, showing location of active deep tests of Gulf Oil Corp. and Humble Oil & Refining Co. The Gulf test has logged a favorable showing in an 8,000-foot horizon

Polk County Deep Sand

Gulf Oil Corp.'s attempt to open a deeper sand in the Segno field, Polk County, has the appearance of being successful. Its No. 6 Ragan, I.&G.N. Survey No. 14, cored sand with an oil odor at 8,100-05 feet, and from 8,105-15 feet. A seven-minute drill stem test at 8,099-8,105 feet, through ¼-inch chokes top and bottom, showed no pressure and recovered 7 feet of mud. Another test, lasting 25 minutes, was made at 8,108-17 feet and showed 10 pounds of pressure, 10 feet of oil and 30 feet of mud. Another test was scheduled to be made. This sand is believed to be the Sparta, and the outcome of this test will have much bearing on other proven fields along the Conroe Trend. The main production at Segno is from the Upper Cockfield at 5,100 and 5,300 feet, although the same company last year opened production from the Upper Saline Bayou formation at approximately 6,200 feet.

New Sand at Orange

A new sand for the southwest flank of the Orange field, Orange County, was indicated with the showing of Ryan & Thompson No. 1 W. S. McGill. Broken sand and sandy shale showing oil was cored at intervals from 5,683-5,732 feet. A drill stem test was attempted at 5,676-32 feet, but the seat slipped after one minute and the test showed no pressure and recovered 270 feet of gas-cut drilling mud and 30 feet of oil and mud. This section is approximately 200 feet higher than the regular pay opened last year in the 5,900-foot horizon. The hole is being cored ahead for the deeper sand.

Two 10,000-Foot Producers

Two 10,000-foot producers were added to the Old Ocean field, Brazoria County, and locations for two wells were made. Harrison & Abercrombie No. 1 Osberne, flowed 199 bbls. per day through various-sized chokes. The well was completed after drilling to a total depth of 10,413 feet. No. 5 Bernard flowed 232 bbls. through various chokes. Production was from perforations slighty above the bottom of the hole at 10,401 feet. Locations were made for No. 1 L. Augsburger and No. 1 David Kaufman, both in the Charles Breen Survey.

Coastal Louisiana

In Coastal Louisiana, the Sparta production in the Villa Platte field, Evangeline Parish, was extended with the completion of three wells. No. 1 Tate, section 44, flowed 117 bbls. on a nine-hour test through a ¼-inch choke. The hole is bottomed at 9,055 feet, with sand logged at 8,908-70 feet. No. 1 Pierre McDaniels, about a half mile from production in section 44, flowed 178 bbls. in 24 hours through various-sized chokes from a total depth of 9,030 feet. No. 1 Hirsch in the same section flowed 339 bbls. per day through a ⅜-inch choke from sand topped at 8,974 feet and bottomed at 9,040 feet.

In the Cheneyville field, Rapides Parish, Amerada Petroleum Corp. No. 4 Weil, which proved this field a salt dome last week, was tested through perforations at 6,695-6,710 feet and the hole is being plugged back to the 5,800-foot sand, after it showed salt water. The sand was topped at 6,980 feet and the formation was cored to a total depth of 7,045 feet.

In the Horseshoe Bayou field, St. Mary Parish, Texas Co. No. 1 St. Mary Land Co., section 37-7s-9e, cored sand with an oil odor at 10,655-95 feet and from 10,892 feet and the mud is being reconditioned. This is the second well drilled since the discovery well which was completed through perforated casing at 10,863-73 feet.

Deep Hole Record

The record for deep drilling along the Gulf Coast

(Continued on Page 76)

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Among Gulf Coast Drilling Contractors

Harry L. Edwards Drilling Co. received contract from J. A. Fite to drill his No. 1 fee in the Sandy Point field. The well is west of production in the southeast corner of Lot 45. In the East Telferno field, Victoria County, Edwards No. 2 Robertson gave indications of being a large gasser in the top section of the discovery sand, and the hole is being cored deeper.

The completion of Jack Frazier No. 1 Vollmer-Neiman in the Eureka Heights gas field last week has resulted in several rigs being moved in, and locations for several more are reported to have been made. The Alamo Drilling Co. and J. C. Means have rigged up No. 2 Laura Lackner, while location for No. 3 has been made. The Houston Oil Co. is moving in material for No. 2 Helberg Lackner. Jack Frazier has spudded No. 1 Varner Realty Co. located about 750 feet south of the producer.

Housh, Thompson & Schofield received contracts for two wells to be drilled for the Mortex Oil & Gas Co. in the Fairbanks field. The locations are west and south of the discovery well on the Ley and Devant leases in the G. S. Reid Survey. Drilling activity in this field is increasing each week. Rowan Drilling Co. received contract for two wells from Amerada Petroleum Corp. and Stanolind Oil & Gas Co. while Ownby Drilling Co. is nearing the sand on E. L. Smith No. 2 Meyers.

Nichlos Drilling Co. extended Sparta production in the Villa Platte field, Evangeline Parish, Louisiana, with the completion of two wells for Continental Oil Co. The rigs are being moved to other locations. Other activity is reported in the Valentine field for the Pan American Production Co.

Payne Drilling Co. is drilling a well in the old Ogburn Prospect, northwestern Harris County, for O. W. Killam, which has attracted wide attention. Sand with an oil odor was recovered in the top section of the Cockfield formation at 6,535-45 feet, and the hole is being cored to the Conroe sand where a better section is expected to be found.

Thompson Drilling Co. apparently found a shallower sand on the southwest flank of the Orange field for S. J. Ryan and others. Showings were logged at 5,683-5,713 feet. A drill stem test was unsuccessful due to the tool slipping, and it showed 30 feet of oil and several hundred feet of gas-cut drilling mud. The section will be tested if saturation is not found in the discovery horizon at 5,900 feet.

Henry DeArman is drilling below 4,800 feet in No. 1 H. Boyle Spencer, a wildcat located south of Simonton in Fort Bend County. The well is being drilled jointly with J. H. Spencer. A slight gas showing was reported to have been logged around 4,200 feet.

Cron & Gracey have reached a depth of 3,250 feet in Red Bank Oil Co. No. 1 H. H. Coffield, a wildcat, located about 10 miles south of Rockland in the E. Sante Survey.

O. W. Dyer, who for the past year has had all of his tools running for the Atlantic Refining Co., is starting a well for himself in the Dickinson field of Galveston County. It is located on the Strong lease and in the J. J. Sherman Survey and will be drilled to the 8,000-foot sand.

With the exception of a semiwildcat location in the Katy gas field, Waller County, the 26 locations reported for the Gulf Coast were staked in proven fields. The location at Katy was made by Stanolind Oil & Gas Co. and it is scheduled to be drilled to a depth of 10,000 feet. The majority of the locations continue to be made in the Hastings field. It has been estimated that there are approximately 80 more locations to be drilled in this field which will keep the present number of rigs running for a few more months.

A close up of Jack Frazier's large rig used in completing his No. 1 Vollmer-Neiman, which opened the first oil production for the Eureka Heights gas field, adjoining the Houston city limits

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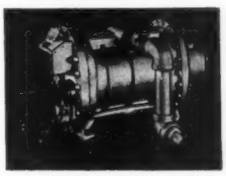

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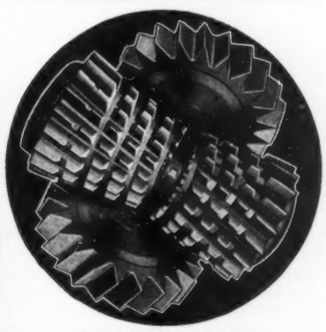

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North and East Texas

By MITCHELL TUCKER

K.M.A. Given 21 New Wells; 166 Deep Tests Are Active

WICHITA FALLS, Tex., Apr. 4.—Lease sales and pool extensions marked the past week's development in the K.M.A. pool of Wichita and northern Archer counties, while the staking of several new wildcat locations featured the rapidly developing search for deep sands in Archer County.

With the daily average production in the K.M.A. pool fast approaching 10,000 bbls., operations continue at a steadily increasing pace. Twenty-one new wells were completed last week for an aggregate initial production of 17,766 bbls. per day, bringing the total number of oil wells in the field to 237 and the average daily production figure to 9,789 bbls. There are now 76 rigs up and locations made in the field, and 166 drilling wells.

As a result of the Hull & Silk discovery in Archer County (which has become known as the Panther field) North Texas wildcatters are extending their search for the deep Strawn pay zone throughout Archer County. There are two wells drilling and one location made in the immediate vicinity of the Hull & Silk discovery in the Panther field, and nine other locations and drilling wells are scattered through the county.

The discovery well of the new field in Archer County, now known as Blackwell Oil & Gas Co. and Helmerich & Payne No. 1 Wilson, has been connected by the Texas Pipe Line Co., which is taking the oil produced. Official potential of this well was 127 bbls. of oil in one hour, through three-quarters inch tubing choke.

Blackwell Oil & Gas Co. and Helmerich & Payne No. 2 Wilson, 1,000 feet southeast of the discovery well, in Block 25, A.T.N.C.L. Survey, is drilling below 2,575 feet. About 3 miles northeast of the Panther deep discovery well, J-K-L Oil Corp. No. 1 Ford, in the Cecil Survey, Abstract 982, is drilling ahead below 3,475 feet. N. H. Martin & Sons staked location for No. 1 L. F. Wilson, 330 feet from north and east lines of Lot 9, Block 25, A.T.N.C.L. Survey, just west of the discovery well. Lewis Production Co. No. 1 W. C. Frey, section 17, P.S.L. Survey, 3 miles south of K.M.A. production, is testing an oil showing in lime below 4,100 feet. Fain & McGaha Oil Corp. of Wichita Falls staked location for No. 1 W. M. Fuller, 330 feet out of the NE cor. section 12, Block 1, H.&T.C. Survey, Abstract 926, in northeast Archer County. This wildcat is about 5 miles south of Wichita Falls and 11 miles northeast of the Panther deep discovery. In the eastern part of Archer County, W. B. Omohundro and L. T. Burns, both of Wichita Falls, have made location on a block recently acquired by the two operators for their No. 1 Wilson, in the northeast corner of Lot 44, Brazos River School Lands. Harry Hines and J. D. Hancock, operators in the Flag Lake pool of Henderson County, in East Texas, made location for No. 1 W. R. Hammond, near the center of Lots 37 and 38, H. Corzine Survey, Abstract 56, Archer County. This is just south and east of the shallow Chalk Hill pool in the eastern part of the county, where two deep K.M.A. lime wells are now producing. The other test will be their No. 1 J. L. Anderson, 330 feet from south and west lines of section 23, south Anderson ranch subdivision, 2 miles southwest of the old Swastika pool in the southwestern part of Archer County.

An Eastern Extension

Farther north, and in Wichita County, the K.M.A. pool proper continues to expand as new extensions are added weekly. A 2-mile eastern extension on the south end of production was believed assured last week by an outpost long considered to be a dry hole. Peery & Woody No. 1 Mary Bishop, formerly E. J. Stump and others No. 1 Bishop, in the south end of the L. Netherly Survey, Abstract 240, responded to a 350-quart shot by flowing for 15 minutes over the mast of the spudder. The well was shot from 3,884 feet to 3,970 feet and is now rated one of the better producers in that section of the pool.

Also on the eastern side of the pool and about 2 miles due east of the Clyde Texan producer, Flannigan & Modesett Drilling Co. No. 1 Texas Mortgage Co., NW cor. of Block 1, J. McCool Survey, Abstract 192, was moving in spudder to drill plug from 7-inch casing cemented at 3,940 feet. Electrical survey revealed saturation at 4,030-45 feet. Total depth is 4,070 feet. Rig has been skidded 660 feet west of this wildcat, and the same operators are now drilling ahead on their No. 2 Texas Mortgage Co.

On the west side of the pool, M. Staniforth No. 1 Waggoner has proven itself to be a 1-mile extension for that section. Located in section 35, Block 7, H.&T.C. Survey, 1 mile west of the Joe Worsham No. 1 Waggoner, the test is now shut in awaiting pipe-line connections after filling storage on initial flows.

Important Lease Sales

Several large lease sales in both the K.M.A. field and Archer County also featured the week's activity. Shell Petroleum Corp. has consummated a deal with Phillips Petroleum Co. for an undivided one-half interest in the 960-acre Riley tract, Floyd Jordan Survey, on the west side of the K.M.A. pool. Shell agrees to make two 4,000-foot tests on the tract, starting both before May 1. This area has been thoroughly mapped from core drill and seismic records. The Shell Petroleum Corp. also entered the Archer County activity last week with the purchase of leases on 140 acres in Block 3, Denton County School Lands, about one-half mile southeast of Holliday and 2½ miles northwest of the Panther field discovery well.

Phillips Petroleum Co. also entered the Archer County activity with the purchase of 149 acres in the NW SW section 26, and a 29-acre tract in NW NW section 23, all in the A.T.N.C.L. Survey and out of the Wilson land, about a mile and a half southwest of the Panther field.

Bryson Pool Separated

A 20-acre spacing rule was adopted last week by the railroad commission for the East Bryson field in Jack County, which is defined as producing from a different formation than the Bryson field proper. Evidence presented held that the East Bryson producing formation is approximately 80 feet below the base of the Bryson sand, and also that 20-acre spacing was needed to prevent waste. Proration on a marginal, plus potential, basis was prescribed.

DALLAS, Tex., Apr. 4.—The Railroad Commission of Texas has ordered all East Texas operators to report the status of wells making water, pumping, using gas lift, or incapable of making their allowable. Reports are to be filed not later than April 15, and were ordered "in furtherance of conservation." New work continues in the East Texas field, as 38 new locations were announced in the past week. Completions for the week numbered 34, bringing total producers in the field to 24,845. There are now 46 rigs up and 78 drilling wells in the area.

With outposts either drilling or proposed on three sides of the Flag Lake pool of northwestern Henderson County, that area centered much of the attention in eastern Texas. The fourth producer for the pool, and the first by a major company, seemed assured at the close of the week. The Texas Co. No. 1 F. H. Harrell, in the George Hancock Survey No. 7, southeastern corner of the pool, topped the Woodbine sand at 3,075 feet and drilled to 3,081 feet, where a 10-minute drill stem test with ½-inch chokes at top and bottom, revealed 2,300 feet of oil and 60 feet of drilling fluid with no salt water present.

Despite the fact it was reported high on top of the Austin chalk, DeArman and others No. 1 Persons, east outpost in the field, is coring ahead below 3,062 feet for the Woodbine sand, below the point where it was normally expected. Official gauge on Hines & Hancock No. 1 Dillard, in the Henry Jefferys Survey, south offset to the discovery well, was 330 bbls. of oil in 24 hours through ¼-inch choke on railroad commission test. This figure is considerably less than previous estimations of the well's ability.

New Houston County Gas Area

Another deep Woodbine sand gas area for northwestern Houston County was opened last week by Humble Oil & Refining Co. and Sun Oil Co. No. 1 H. H. Dailey, in the J. L. Riviere Survey 3½ miles southeast of Navarro Crossing and about 18 miles west of the Grapeland gas area. On an 8-minute drill stem test from 5,795 feet to 5,880 feet, through ⅝-inch top and bottom tubing chokes, the well showed 90 feet of drilling fluid and an estimated 10,000,000 to 12,000,000 feet of dry gas. Fearing the test to be near the water table, operators plan to drill only a few feet more and then prepare for official completion test.

Limestone County

After a series of drill stem tests in a lime section from 5,351-5,492 feet last week revealed only salt water and drilling fluid, the next objective of the Stanolind Oil & Gas No. 1 Tenny Norris, in the K. Thrasher Survey of Limestone County, will be the testing of the Edwards lime section in which a showing of oil was encountered while drilling.

Deep Test

Humble Oil & Refining Co. and Gulf Oil Corp. No. 1 Robinson, M. Mann Survey, deep test about 2½ miles southwest of Longview in Gregg County, last week became the fourth test to penetrate the Lower Marine section in the East Texas Basin. Top of the Lower Marine sector and base of the Travis Peak was found at 9,410 feet. The test is now drilling below 9,461 feet in hard gray shale and sand.

NORTH TEXAS COMPLETIONS

Archer County

Hull-Silk, Helmerich & Payne, Inc. No. 1 L. F. Wilson, 3,830-58 feet, 1,952 bbls., wildcat. Petroleum Producers Co. No. 1 L. F. Wilson H, 1,587 feet, dry. Westmount Oil Co. No. 3 F. Shropshire, 1,768-75 feet, 85 bbls.

Clay County

Deep Oil Development Co. No. 1 C. H. McClellan, 4,684 feet, dry. Loesche & Gorman No. 3 Louella Thornberry, 1,081-1,108 feet, 250 bbls. W. H. Metzner No. 10 J. J. Taylor, 1,081-1,108 feet, 126 bbls. Metzner & Burns No. 7 J. J. Taylor, 1,084-1,110 feet, 300 bbls.; No. 8 J. J. Taylor, 1,084-1,110 feet, 280 bbls.; No. 9 J. J. Taylor, 1,085-1,108 feet, 260 bbls. Sussex Oil Corp. No. 11 C. J. Shumake, 1,137-55 feet, 90 bbls.

Cooke County

Kingery Brothers and others No. 6 Alice Johnson, 1,232-40 feet, 286 bbls. Mudge Oil Co. No. 23 Alice Johnson, 1,215-36 feet, 60 bbls. Pace Petroleum Co. No. 7 J. R. Winstead B, 1,172-86 feet, 160 bbls. Schermerhorn Oil Co. No. 13 Mary Kessler, 1,290-1,315 feet, 15 bbls. Trumter Oil Co. No. 18 G. T. Andress, 740-88 feet, 60 bbls.

Jack County

Benoil Co. No. 1 A. B. Kuykendall A, 2,993-3,150 feet, 350 bbls.; No. 2 J. S. Rhodes, 3,309 feet, dry; No. 3 J. S. Rhodes, abandoned location. Brazos River Gas Co. No. 4 M. M. King B, 3,057 feet, dry. G. M. Gillespie No. 1 Annie B. Street and others, 3,395 feet, dry. Rowan Nichols Oil Co. and Wilson No. 1 John Matlock, 3,071-3,112 feet, 320 bbls. J. Worsham and others No. 2 O. E. Cash, 3,220-53 feet, 150 bbls.

Denton County

W. C. Curry No. 1 G. F. Owens, 1,681 feet, dry.

Knox County

O. P. Dorsey No. 1 A. S. Haskins, abandoned location.

Wichita County

L. T. Burns No. 29 First National Co., 3,667-3,888 feet, 1,150 bbls. Burns & McCutcheon No. 2 First National Co., 3,627-3,870 feet, 775 bbls. Chapman & McFarlin No. 1 Sparks Mayfield, 3,944-75 feet, 875 bbls. G. W. Cooper No. 48 J. and J. Waggoner, 3,718-54 feet, 510 bbls. Dorian & Jackson No. 1 L. C. Denny, 3,758-3,940 feet, 550 bbls. Fain & McGaha Oil Corp. No. 3 Fain and others, 3,780-3,882 feet, 850 bbls. Golding & Cochran No. 16 J. L. Waggoner A, 3,761-3,823 feet, 550 bbls. J. S. Graham No. 1 E. M. Goetze, abandoned location. Kadane-Griffith Oil Co. No. 2 Mrs. Anna Mangold B, 3,715-97 feet, 750 bbls. King Oil-Perkins & Cullum No. 1 W. P. Ferguson, 3,713-3,860 feet, 1,010 bbls. F. W. Merrick, Inc. No. 1 W. T. Waggoner, 3,814 feet, dry. Mulberry Oil Co. No. 1 Mrs. Anna Mangold, 3,734-3,854 feet,

(Continued on Page 82)

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Rocky Mountain Area

By
T. R. INGRAM

Lance Creek Outpost Makes Good Showing in Deep Sand

DENVER, Colo., Apr. 4.—The Gulf Oil Corp. wildcat in eastern Colorado is again testing a showing of oil.

Seven new operations were reported in Wyoming. The Wyco Oil Co., Inc., No. 3 Chappel, in East Rock River district, was dry and abandoned. H. Kenyon Burch completed a 101-bbl. well in the Pilot Butte field at 730 feet in his No. 9 Government. The Stanolind Oil & Gas Co.'s Beaver Creek wildcat in Fremont County made 5,000,000 feet of gas in the Upper Morrison on a drill stem test. The Continental Oil Co. No. 3-A Dielman, an outpost on the southeast flank of Lance Creek, is showing for a producer in the deep sand. The Rocky Mountain Drilling Co. No. 1 Lee, a discovery in the Sundance in Middle Baxter Basin, tested 6,600,000 feet of gas. One small producer and one dry hole were completed in the Osage field.

Montana gasoline sales showed an increase in February over February of last year, which the percentage of Montana made gas gaining. The Santa Rita Oil & Gas Co. No. 8 Tribal, on the west side of Cut Bank, was dry and abandoned and limited the Sunburst pool in that district. A 300-bbl. well was completed in the Rimrock pool on the west side of Kevin-Sunburst.

NEW MEXICO

Another outpost in the Vacuum district was started at Texas Co. No. 1-P State, C NW SE section 7-18-35, Lea County. It is about 1½ miles southeast of the company's No. 1-L State at the south end of the pool. Repollo Oil Co. No. 1-197 State, SE cor. section 6-17-34, 4 miles northwest of Vacuum production, was reported high structurally on upper markers. It was bottomed at 2,770 feet in anhydrite, with 9⅝-inch casing set at 2,756 feet.

A good natural producer in the Vacuum pool was completed at Phillips Petroleum Co. No. 1 Santa Fe, C SW NW section 31-17-35, southeast side of the area. It flowed 360 bbls. of oil naturally in six hours through tubing, accompanied by 2,670,000 feet of gas. Pay was topped at 4,390 feet, total depth 4,665 feet.

Other Lea County completions: Texas Co. No. 3 Falby, C NE SW section 8-22-37, topped pay at 3,540 feet, total depth 3,730 feet, and flowed 73 bbls. of oil through tubing in eight hours after perforating casing and acidizing.

Stanolind Oil & Gas Co. No. 2-C Hill, C SW NW section 5-21-37, flowed 110 bbls. of oil in 20 hours through choke. It had pay at 3,758-78 feet, total depth 3,780 feet.

Skelly Oil Co. No. 2 Hill, C NW NE section 6-21-37. had pay at 3,665 feet, total depth 3,780 feet, and flowed 165 bbls. of oil daily through choke and perforations.

Humble Oil & Refining Co. No. 4 Fopeano, C SW SW section 26-20-36, flowed 88 bbls. of 24.3 gravity oil through choke in four hours after acidizing. It found pay at 3,755 feet and was bottomed at 3,850 feet.

Continental Oil Co. No. 3-B-6 Elliott, C SE SE section 6-22-37, topped pay at 3,705 feet, total depth 3,778 feet. It was shot and acidized and flowed 147 bbls. of fluid through choke in 13 hours, cutting 10 per cent basic sediment and water. Gas volume was 3,062,000 feet.

Humble Oil & Refining Co. No. 2 Greenwood, C NW SW section 9-22-37, was shot and flowed 36 bbls. of oil in four hours through tubing, with 1,368,000 feet of gas. Gravity of the oil was 37.3 degrees. It had pay at 3,630 feet, total depth 3,714 feet.

James A. Mascho No. 1 Cloyd, C SE SE section 20-22-33, was bottomed at 3,516 feet, plugged back to 3,190 feet and was abandoned. It produced an estimated 10,000 bbls. of sulfur water daily at 3,325 feet.

Anderson & Prichard Oil Corp. No. 2 Jal, C NW NE section 8-25-37, found pay at 3,403 feet, was bottomed at 3,479 feet, was shot and flowed 288 bbls. of oil through tubing in 12 hours.

Repollo Oil Co. No. 3-C Stuart, SE NE SW section 10-25-37, an old well deepened and recompleted, topped pay at 3,330 feet, total depth 3,395 feet, and flowed 95 bbls. of oil daily through tubing.

Gulf Oil Corp. No. 1 LeMunyon, C NE NE section 28-23-37, an old well, was acidized with 7,000 gallons, pumped 4 bbls. of oil daily and was abandoned.

The Curry County wildcat drilled by Bond & Harrison at No. 1 Hart Estate, C NW SE section 13-2n-31, found salt water at 3,075 feet, sulfur water at 3,100 feet and was dry and abandoned at 3,258 feet, total depth.

Lea County

Amerada Pet. Corp. No. 6 Byrd, SE sec. 12-20-36. Loc
Amerada Pet. Corp. No. 3 Laughlin, C NW NE sec. 9-20-37. T.D. 2,855 ft.; set 8-in. 2,573 ft.
Amerada Pet. Corp. No. 1 State VA, C SE SW sec. 23-17-34. Drlg. 4,368 ft.
Amerada Pet. Corp. No. 1 State VB, C NE SW sec. 36-17-34. Drlg. 3,055 ft.
Amerada Pet. Corp. No. 1 Frances Stuart, NE SW NE sec. 22-25-37. Drk.
Anderson-Prichard Oil Corp. No. 1 Carlson, C SW NW sec. 21-25-37. O.W.D.D.; T.D. 3,020 ft.; flwd. 40 B.O. P.D.; S.I.
Anderson-Prichard Oil Corp. No. 1 Wells, C SE SE sec. 5-27-37. Drlg. 3,610 ft.
Anderson-Prichard Oil Corp. No. 2 Langlie, SE sec. 8-25-37. Drlg. 3,420 ft.
Bradley Oil Co. No. 1 Downes, SE NE SE sec. 5-22-37. Drlg. 3,450 ft.
Cities Service Oil Co. No. 3-A Closson-A, C NE SE sec. 18-22-36. T.D. 3,112 ft.; set 9⅝-in. csg. 3,085 ft.
Cities Service Oil Co. No. 1-H State, C NE NE sec. 17-22-36. T.D. 3,884 ft.; prep. to deepen.
Continental Oil Co. No. 1-B-15 Britt, C W½ NW NW sec. 15-20-37. Loc.
Continental Oil Co. No. 2-A-20 Jack, C SE SE sec. 20-24-37. Cellar.
Continental Oil Co. No. 1-A-31 Marsh, SE sec. 31-20-39. Wildcat; T.D. 4,346 ft.; bailing.
Continental Oil Co. No. 3-B-23 Reed, C E½ SE SE sec. 23-20-36. T.D. 3,750 ft.; set 5½-in. csg. 3,746 ft.
Continental Oil Co. No. 4-B-24 Reed, CEL NW SW sec. 24-20-36. T.D. 3,745 ft.; set 5½-in. csg. 3,742 ft.
Continental Oil Co. No. 1-F-1 State, C SW SW sec. 1-21-36. Drlg. 3,853 ft.
Continental Oil Co. No. 1-G-12 State, C SE SW sec. 12-18-35. T.D. 3,951 ft.; fsg.
Continental Oil Co. No. 1-H-35 State, C SE NE sec 35-17-34. T.D. 4,130 ft.; rng. csg.
Continental Oil Co. No. 1-I-16 State, C NW NW sec. 16-18-35. T.D. 310 ft.; set 13-in. csg. 305 ft.
Cranfill & Germany No. 1 Weir, C NE NE sec. 15-20-37. T.D. 4,210 ft.; S.D.O.
Culbertson & Irwin No. 3 Alston, NE cor. sec. 27-25-37. T.D. 1,112 ft.; set 9-in. csg.
Culbertson & Irwin No. 6-A Humphrey, NE SW SE sec. 3-25-37. Drlg. 295 ft.
Culbertson & Irwin No. 1 Liberty Royalty, NW sec. 3-25-37. T.D. 3,396 ft.; jarring on tools.
Danglade & Clower No. 1 Currie, NE NE SW sec. 6-21-37. Drlg. 3,315 ft.
Danglade & Clower No. 1 Glier, C SW NE sec. 32-22-37. T.D. 3,680 ft.; C.O.; flows by heads.
L. E. Elliott No. 2 Elliott, NE NW SE sec. 26-20-36. Drlg. 1,610 ft.
A. R. Eppenauer No. 1 Stuart, NW NE NE sec. 22-25-37. Drlg. 3,218 ft.
J. E. Farrell No. 2-C Walden, C SE SW sec. 15-22-37. Drlg. 3,700 ft.
Geo. F. Getty, Inc., No. 2-F State, C NW NE sec. 36-17-34. Drlg. 3,580 ft.
Geo. F. Getty, Inc., No. 1 Riggs, NW sec. 1-26-36. Wildcat; T.D. 3,358 ft.; P.B. 3,346 ft.; flwd. est. 150 B.O. P.D.; C.O.
Gulf Oil Corp. No. 1 Alley, C NE SE sec. 10-23-37. Drlg. 3,280 ft.
Gulf Oil Corp. No. 7-F Bell, C SW NW sec. 36-20-36. Drlg. 2,702 ft.
Gulf Oil Corp. No. 1 Boyd, sec. 23-22-37. T.D. 3,681 ft.; tstg.
Gulf Oil Corp. No. 1 Elliott, SW SE SE sec. 15-25-37. Drlg. 3,420 ft.
Gulf Oil Corp. No. 2-D Kutter, C SE SW sec. 8-19-37. T.D. 4,040 ft.; tstg.
Gulf Oil Corp. No. 4-C Kutter, C SW NW sec. 18-19-37. Drk.
Gulf Oil Corp. No. 1-D Mattern, SW sec. 6-22-37. T.D. 3,795 ft.; P.B. 3,775 ft.; C.O.
Gulf Oil Corp. No. 4 McCormack, C SW SE sec. 32-21-37. Drlg. 2,220 ft.
Gulf Oil Corp. No. 2 Ramsey, C SW SW sec. 27-21-36. T.D. 3,895 ft.; P.B. 3,871 ft.; to shoot.
Gulf Oil Corp. No. 1 J. Whitten, SE SE SW sec. 33-23-36. T.D. 2,998 ft.; S.D.
Humble O. & R. Co. No. 2-H State, C SE SW sec. 27-22-37. T.D. 3,660 ft.; tstg.
Humble O. & R. Co. No. 3 Williams, C SW NW sec. 34-24-37. T.D. 3,532 ft.
Inter-Coast Pet. Co. and J. C. Clower No. 1 State, SW cor. sec. 2-23-37. Drlg. 2,720 ft.
Jal Nat. Gas Corp. No. 2 Justis, NE sec. 20-25-37. T.D. 3,029 ft.; tstg.
Carl B. King No. 1-A Stuart, NW NE NW sec. 14-25-37. T.D. 3,395 ft.; S.I.
Magnolia Pet. Co. No. 1 Brunson-Argo, C NW NE sec. 9-22-37. T.D. 1,396 ft.; R.U.S.T.
Magnolia Pet. Co. No. 1 State G, NW NW NE sec. 34-17-34. T.D. 4,905 ft.; P.B. 4,794 ft.
Magnolia Pet. Co. No. 1-J State, C NE SE sec. 22-17-34. Drlg. 4,590 ft.
Magnolia Pet. Co. No. 1-K State, C NW SE sec. 31-17-35. Drlg. 4,276 ft.
Magnolia Pet. Co. No. 2 State-Bridges, sec. 14-17-34. T.D. 4,593 ft.; flwd. 51 B.O. in 1 hr., naturally.
Magnolia Pet. Co. No. 3 State-Bridges, C NE NW sec. 26-17-34. Drlg. 2,115 ft.
Magnolia Pet. Co. No. 4 State-Bridges, C NW NE sec. 26-17-34. T.D. 3,955 ft.; S.D.; repairs.
Magnolia Pet. Co. No. 5 State-Bridges, C NE NW sec. 26-17-34. Drlg. 4,027 ft.
C. T. McLaughlin No. 1 Polhamus, NE sec. 9-24-37. T.D. 3,672 ft.; S.D.O.
National Drlg. & Prod. Co. No. 1 Flint, C NE NE sec. 29-20-34. Wildcat; drlg. 3,695 ft.
Ohio Oil Co. No. 1 Kutter D, C SW SW sec. 18-19-37. Drlg. 3,590 ft.
Ohio Oil Co. No. 7 State-McDonald, C SW SE sec. 16-22-36. T.D. 3,871 ft.; C.O.
Ohio Oil Co. No. 10 State-McDonald, C NE SW sec. 16-22-36. Drlg. 1,365 ft.
Ohio Oil Co. No. 1 State-Staplin, C SE SW sec. 30-17-35. Drlg. 4,065 ft.
Ohio Oil Co. No. 2 State-Warn, C NE SW sec. 31-17-35. Drk.
Parker Drlg. Co. No. 1 Irwin, C W½ SW SW sec. 35-24-37. Drlg. 3,370 ft.
Lem Peters No. 1 May, C NW SE sec. 27-22-37. Cellar and pits.
Phillips Pet. Co. No. 2 New, CEL SE NE sec. 26-20-36. Drlg. 3,700 ft.
Phillips Pet. Co. No. 2 Santa Fe, C SW SE sec. 30-17-35. Drlg. 4,526 ft.
Phillips Pet. Co. No. 3 Santa Fe, C SW NW sec. 5-18-35. Cellar, pits.
Plains Prod. Co. No. 1 Humphreys, NE sec. 3-25-37. Loc.
Repollo Oil Co. No. 4 Moseley, SW SE NE sec. 34-24-37. Drlg. 3,235 ft.
Repollo Oil Co. No. 1 State, SE cor. sec. 6-17-34. T.D. 2,770 ft.; R.U.S.T.
Repollo Oil Co. No. 3-B Whitten, NE SE NE sec. 4-24-36. T.D. 2,570 ft.; S.D.
Harry J. Schafer No. 1-A State, C E½ NW NE sec. 26-20-36. Drk.
Shasta Oil Co. No. 2 Woolworth, NE NW NW sec. 28-24-37. T.D. 3,015 ft.; fsg.
Shell Pet. Corp. No. 1-A State, NE cor. sec. 33-18-36. Drlg. 3,952 ft.
Shell Pet. Corp. No. 1-A State, C NW NE sec. 31-17-35. Drlg. 4,650 ft.
Shell Pet. Corp. No. 2-A State, C SW NE sec. 31-17-35. Drlg. 1,502 ft.
Shell Pet. Corp. No. 4-E State, C SW NW sec. 12-20-36. Drlg. 3,800 ft.
Sindorf et al No. 1 Glier, NE cor. sec. 33-22-27. T.D. 3,674 ft.; (cor.); tstg.
Skelly Oil Co. No. 5 J. B. Baker, C SE NW sec. 27-22-37. T.D. 3,620 ft.; tstg.
Skelly Oil Co. No. 3 G. W. Sims, C NW NE sec. 9-23-37. T.D. 3,642 ft.; C.O.
Skelly Oil Co. No. 1-C R. R. Sims, sec. 3-23-37. Drlg. 3,688 ft.
Skelly Oil Co. No. 1-E W. P. Sims, C NW NE sec. 10-23-37. T.D. 3,625 ft.; flwd. 452 bbls. in 24 hrs.
Skelly Oil Co. No. 1-K State, NE NE NW sec. 32-21-37. T.D. 3,761 ft.; flwd. 60 B.O.P.D.
Skelly Oil Co. No. 1 Toby, C SW SW sec. 7-24-37. T.D. 3,666 ft.; setting packer.
Stanolind O. & G. Co. No. 14-A Gilluly, C SW NW sec. 24-20-36. T.D. 2,564 ft.; set 9⅝-in. csg. 2,543 ft.
Stanolind O. & G. Co. No. 2-A Hill, C NE SE sec. 6-21-37. Loc.
Stanolind O. & G. Co. No. 3-C Hill, C NW NW sec. 5-21-37. Drlg. 2,955 ft.
Stanolind O. & G. Co. No. 4-B Myers, C SW NW sec. 21-24-37. T.D. 3,682 ft.; swbg.
Stanolind O. & G. Co. No. 5-B Myers, C NE SW sec. 9-24-37. Loc.
W. H. Street No. 4 Woods, C NE NE sec. 22-22-37. Drlg. 698 ft.
Texas Co. No. 3 Black, C NW NE sec. 21-24-37. Loc.
Texas Co. No. 1 Corbin, C NW SW sec. 19-18-33. Drlg. 4,913 ft.
Texas Co. No. 3 Fristoe, NW SE NE sec. 3-25-37. T.D. 3,480 ft.; tstg.
Texas Co. No. 4 Fristoe, NW NE SE sec. 3-25-37. Cellar and pits.
Texas Co. No. 1-N State, C SW SW sec. 30-17-35. T.D. 1,580 ft.; set 7⅝-in. 1,574 ft.
Texas Co. No. 1-O State, C SW NW sec. 36-17-34. Drlg. 3,350 ft.
Texas Co. No. 1-P State, C NW SE sec. 7-18-35. Loc.
Texas Pacific C. & O. Co. No. 9-A State, Acct. 2, NW SW NE sec. 7-22-36. T.D. 3,825 ft.; tstg.
Texas Pacific C. & O. Co. No. 10-A State, Acct. 2, C W½ SW SW sec. 8-22-36. Drlg. 2,502 ft.
Texas Pacific C. & O. Co. No. 11-A State, Acct. 2, C SE NE sec. 7-22-36. T.D. 234 ft.; rmg.
Two States Oil Co. No. 1 Etcheverry, SE SW NE sec. 10-20-36. T.D. 3,750 ft.; set 5½-in. 3,684 ft.
Ted Weiner No. 1 Smith, NE cor. sec. 4-25-37. Drlg. 420 ft.
Weiner No. 1 Parcell, C SW NE sec. 8-23-28. T.D. 221 ft.; R.U.S.T.
Western Gas Co. No. 1 Curry, C SE SE sec. 1-24-36. T.D. 175 ft.; R.U.R.
Western Gas Co. No. 1 Matkins, C SE SE sec. 15-23-36. Drlg. 2,840 ft.

Eddy County

F. E. Baker No. 1 Eddy, NE sec. 12-22-27. T.D. 2,117 ft.; S.D.O.
Barnett Oil Dev. Co. No. 1 King Permit, C NW SE sec. 23-26-30. T.D. 980 ft.; S.D.
Carper Drlg. Co. No. 3 Gissler, C E½ E½ NW sec. 23-17-30. Drlg. 2,860 ft.
Danciger O. & R. Co. No. 4-A Turner, C SW SW sec. 18-17-31. Drlg. 1,750 ft.
Danciger O. & R. Co. No. 1-B Turner, CEL NE SE sec. 17-17-31. Loc.

D. & B. Oil Co. No. 2 Jenkins, SW NW NW sec. 20-17-30. T.D. 3,265 ft.; swbg. 20 B.O.P.D.
D. & B. Oil Co. No. 3 Jenkins, NE NE NW sec. 20-17-30. M.I.M.
Emperor Oil Co. No. 4 Puckett, C NE NE sec. 24-17-31. Drlg. 3,643 ft.
Emperor Oil Co. No. 5 Puckett, C SW NE sec. 24-17-31. Drlg. 3,450 ft.
Finley & Cherry No. 1 Buchley, C NW NW sec. 28-16-31. Wildcat; T.D. 3,750 ft.; S.D.
Flint Prod. Co. No. 1-B State, SE sec. 20-17-30. Drlg. 3,830 ft.
C. J. Frederick No. 1 Reed, C NE SW sec. 28-24-28. Drlg. 2,015 ft.
F. W. & Y. Oil Co. No. 8-A Gissler, NE NW NE sec. 23-17-30. T.D. 3,237 ft.; fsg.
F. W. & Y. Oil Co. No. 9-A Gissler, C SE NE sec. 14-17-30. Drlg. 3,000 ft.
F. W. & Y. Oil Co. No. 1-B Gissler, SW sec. 14-17-30. Drlg. 3,375 ft.
F. W. & Y. Oil Co. No. 2-B Gissler, C NW NW sec. 24-17-30. T.D. 3,505 ft.; C.O.
F. W. & Y. Oil Co. No. 3 Jackson, C NW SE sec. 13-17-30. T.D. 2,953 ft.; fsg.
Grayburg Oil Co. No. 11 Burch, NE NE SE sec. 19-17-30. Drlg. 3,048 ft.
Grayburg Oil Co. No. 4 Keely, SE SW NE sec. 24-17-9. T.D. 3,588 ft.; to test.
H. A. Hartwell No. 1 Vandagrift, NE NE SE sec. 8-18-27. T.D. 2,000 ft.; S.D.O.
R. L. Holcomb No. 1 State, NW sec. 22-17-28. T.D. 1,971 ft.; C.O.; est. 20 B.P.B.
C. F. Ingram No. 1 Page, NE NE SW sec. 15-21-28. T.D. 1,495 ft.; S.D. for new rig.
B. M. Koehane et al No. 1 Shannon, SE cor. sec. 27-16-31. Drlg. 3,540 ft.
Paul Moran No. 1 Crawford & Smith, NW NW SW sec. 24-24-26. T.D. 930 ft.; S.D.; repairs.
Murchison & Closuit No. 1 Foster, SE NE SE sec. 17-17-31. Drlg. 2,500 ft.
Murchison & Closuit No. 2-A State, NW SE SW sec. 16-17-31. T.D. 3,150 ft.; rng. csg.
Pecos Valley Gas Co. No. 1 Sappenfield, C SE SE sec. 4-16-28. Drlg. 2,040 ft.
Premier Pet. Co. No. 1 Beeson, NE SE SE sec. 28-17-30. Drlg. 2,240 ft.
Red Gulch Oil Co. No. 2 Keyes, C SW SE sec. 4-17-28. T.D. 850 ft.; S.D. for repairs.
Repollo Oil Co. No. 2-C McIntyre, NE cor. sec. 20-17-30. Drlg. 1,815 ft.
Repollo Oil Co. No. 4-D McIntyre, NW NE NE sec. 21-17-30. T.D. 3,265 ft.; tstg.
Repollo Oil Co. No. 2-A Parke, NW NW NE sec. 22-17-30. T.D. 2,900 ft.; set 7-in. csg.
Repollo Oil Co. No. 1-B Parke, SW cor. sec. 15-17-30. Drlg. 3,216 ft.
Paul Sarget No. 1 State, NE sec. 16-17-31. T.D. 3,749 ft.; P.B. 3,745 ft.; tstg.
R. A. Shugart No. 1 Coulthard, C NW SW sec. 35-18-31. T.D. 4,088 ft.; P.B. 3,920 ft.; shot; swbg. 85 B.O.P.D.
W. K. Royalty No. 2 State, C NW NE sec. 16-17-31. Drlg. 3,180 ft.
W. O. Snyder No. 1 Pecos Irrigation, C NE SE sec. 15-25-28. T.D. 3,297 ft.; S.D.
Western Drlg. Co. No. 1-A Western, SE SW NW sec. 23-17-29. Drlg. 325 ft.
Neil Wills No. 2-A State, CEL SE NE sec. 19-20-30 T.D. 1,510 ft.; tstg.

Chaves County

E. J. Fisher No. 1 Etz Permit, NE sec. 23-7s-26. Drlg 1,525 ft.
Grastorf & Caudill No. 1 Smith, C NE NE sec. 1-4s-29. Wildcat; T.D. 680 ft.; S.D.O.
Interstate Minerals, Inc., No. 1 Dunigan, NW cor. sec. 15-15-30. Loc.
J. & L. Drlg. Co. No. 2 Hurd, SW sec. 11-11-26. Drlg 850 ft.

De Baca County

Land Owners Oil Co. No. 1 McAdoo, SW cor. sec. 16-1s-7e. O.W.; prep. to deepen from 5,850 ft.; S.D.
James D. Ward No. 1 Summers, NW NE SW sec. 17-4n-20. T.D. 260 ft.; S.D.
N. F. Woods No. 1 Jones, C NE SW sec. 17-4n-20. T.D. 25 ft.; S.D.

Dona Ana County

Jules C. Bertrand No. 1 Casad Permit, sec. 24-26-5e. T.D. 47 ft.; S.D.O.

McKinley County

S. Dysart No. 1 Govt., NE sec. 14-14-10w. T.D. 1,390 ft.; fsg.

Otero County

Fred Turner, Jr., No. 1 Ella Everett, C SE SE sec. 34-22-13. Drlg. 3,000 ft.
Fred Turner, Jr., No. 1 H. V. Everett, SE SE sec. 28-22-13. Drlg. 1,700 ft.

Roosevelt County

C. S. Peterson and Conquistadores Oil Co. No. 1 Goodl. NW SE SE sec. 28-8s-30. T.D. 623 ft.; S.D. for csg.

NORTHWEST NEW MEXICO

McKinley County

Claude Walker No. 6 fee, SE SW SE sec. 20-20n-9w Drlg. 350 ft.

San Juan County

Continental Oil Co. No. 73 Rattlesnake, C NW SE sec. 2-29n-19w. Drlg. 670 ft.
California Synd. No. 1 Abreo, SW SW sec. 27-30n-11w. Drlg. 150 ft.

Socorro County

Central New Mex. Oil Co. No. 1 Belen Ld. Grant, NW sec. 16-3n-1e. S.D. 2,700 ft. for csg.

Torrance County

Chief O. & G. Co. No. 1 Pace, SE sec. 12-6n-7e. T.D. 2,020 ft.; fsg.

COLORADO

Archuleta County

Pagosa Oil & Dev. Co. No. 1 Macht, S sec. 32-36n-1w. Resumed at 328 ft. where it S.D. last December after landing 12½-in. on bttm.

Cheyenne County

Scouts are again at the Gulf Oil Corp. wildcat in Cheyenne County to watch a test of the horizon in which a show of oil was encountered at 4,808-15 feet. The formation was drilled through with cable tools to

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MacClatchie Streamlined Valves are recognized as the standard of the industry. Their streamlined construction gives unobstructed fluid flow entirely free of lodging areas to collect debris and impair the proper closing of the valve. All of the cross bar and a large part of the seat forms a streamlined striking surface. This large metal striking surface—40% greater than ordinary valves—absorbs the entire blow of the valve and assures longer life without hammered out spots to throw valve out of alignment.

The patented valve rubbers are reversible, giving double life to every rubber.

Valve Seats for the Airflote and Streamlined are interchangeable.

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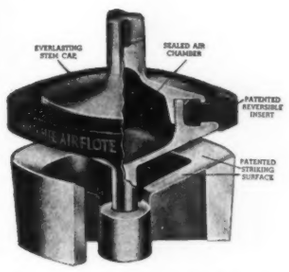
The Airflote is a fundamentally new type of valve engineered for today's deep wells and high circulating pressures. A built-in sealed air chamber gives greater buoyancy, less fluid slippage, more efficient valve action and greatly reduced impact. In air the valve is approximately 20% lighter than other types of the same corresponding size. The reduced weight improves the efficiency and life of the valve by reducing destructive hammering and increasing the sensitivity of the valve to slight changes in fluid movements.

The air chamber is sealed with a large diameter tool joint thread that shoulders to give great strength and rigidity and prevents it from leaking or unscrewing in service. The valve has only three parts—valve body, cap and insert. As there is practically no wear on the cap it can be used over and over again, giving longer life and cutting the maintenance cost.



The Airflote also has reversible insert.

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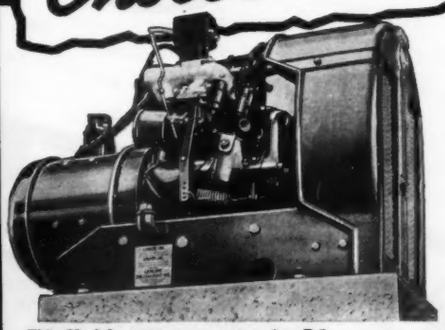

This Model—1500 watt—110 volts—DC . . . starts and stops automatically as load demands. 2-cylinder, 3 H. P. water-cooled engine. Other models available—150 to 6000 watts—hand-operated batteryless, automatic or remote control types.

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• Electric service in the oil fields—whether for portable, stationary or stand-by requirements. Turn Delco-Light on when and where needed. It's easy to set up, move, operate. Saves money . . . new models operate on natural gas or gasoline.

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a total depth of 4,895 feet. The hole was then plugged back to the base of the show at 4,815 feet and acidized with 2,500 gallons. Bailing has started and at last reports water had been bailed down to 4,300 feet at which depth there was some gas showing with a little oil appearing on the top of the bailer.

Gulf Oil Corp. No. 1 Union Pacific-Larsen, C SE NW sec. 13-13s-49w. T.D. 4,895 ft.; P.B. to 4,815 ft. to tst.

Fremont County

Isadore Spangler No. 1 St. Mary's, SE SE SE sec. 2-19s-70w. Drlg. 1,050 ft.

LaPlata County

N. Spatler No. 1 Bryce, SE SW SW sec. 31-33n-9w T.D. 1,510 ft.; set whpstk. and drlg. by tools.

WYOMING

Albany County

The Wyco Oil Co., Inc., No. 3 Chappel, NE NE NW section 33-21n-76w, on the East Rock River structure, was plugged and abandoned at a total depth of 2,546 feet. It set casing on bottom and perforated opposite the several sands. The Wall Creek was at 711 feet. Muddy at 1,655 feet, Dakota at 1,762 feet and Lakota at 1,895 feet. Location was a northeast offset to its No. 1 Chappel, which was completed in the Frontier as a small gas well.

Big Horn County

Prescott & Mileski No. 1 Govt., NE NW SW sec. 1-51n-93w. Drlg. 420 ft.

Clifford S. Johnson No. 1 Johnson, CEL NW NW sec. 24-51n-93w. Drlg. 219 ft.

Joan Oil Co. No. 1 Howell, NE NW NE sec. 32-55n-97w. Drlg. 2,340 ft.

Carbon County

A corrected location on the Ohio Oil Co. No. 3 State-Griffin, in the Medicine Bow field, puts it in the C SW NW of section 36, a south offset to No. 2 State-Griffin, a producer in the Upper Sundance.

Wyco Oil Co., Inc., No. 1 Union Pacific, NE SE NE sec. 3-23n-79w. R.U.R.

Ohio Oil Co. No. 1 Hazlett Est., NE SW SE sec. 34-23n-79w. Bldg. rig.

Ohio Oil Co. No. 3 State-Griffin, C SW NW sec. 36-21n-79w. Bldg. rig; (cor. loc.).

Italo Pet. Co. No. 1 Tunney-Bragg, NE SE NW sec. 11-26n-81w. Drlg. 1,869 ft.

Sinclair-Wyoming Oil Co. No. 12-B Wertz, SE NW NW sec. 7-26-89w. T.D. 5,770 ft.; top Tensleep 5,747 ft.; good sat.; cmtd. 7-in. at 5,739 ft.

Ohio Oil Co. No. 14 H.&C., SE NW SW sec. 35-20n-78w. T.D. 3,130 ft.; top Sundance 3,065 ft.; good sat.; cmtd. 6⅝-in. at 3,072 ft.

Converse County

New Era Fuel Co. No. 2 Brown-Govt., CNL NW SW sec. 25-32n-69w. M.I.M.; (first report).

New Era Fuel Co. No. 1 Boot Cattle, SE SE SE sec. 1-32n-69w. M.I.M.; (first report).

Sand Creek Oil Co. No. 1, C SE SE sec. 29-32n-69w. Drlg. 600 ft.; 8¼-in. at 348 ft.

Ainsworth Oil Co. No. 1 Marberger, NE SE NE sec. 34-32n-69w. Cmtd. 6¼-in. at 784 ft.

Chadron-Osage Oil Co. No. 1 State, SW SW SW sec. 16-32n-69w. Res. at 4,060 ft.

Wyshawn Oil Co. No. 1 Lindley, NW SE sec. 34-32n-69w. T.D. 500 ft.; M.I. heavier mach. to go to 2,000 ft.

Hall-Thornton et al No. 1 Roth, SE NW SE sec. 13-32n-69w. Drlg. 525 ft.; 8¼-in. at 493 ft.

Fremont County

H. Kenyon Burch No. 9 Government, C NW NW section 27-3n-1w, was completed in the equivalent of the Shannon sand at 730 feet for a good well for that district. It pumped 101 bbls. the first 24 hours and then settled to 72 bbls. per day.

The Stanolind Oil & Gas Co. No. 1 Government, an important wildcat on Beaver Creek, is reaching a critical stage. It made a drill stem test in the Upper Morrison at 8,248-86 feet which showed for 5,000,000 feet of gas per day. Next objective is the Lower Morrison, followed by the Sundance.

Sinclair-Wyoming Oil Co. No. 2-B Muskrat, NW NW NE sec. 4-33-92w. Cmtd. 7-in. at 5,434 ft.; perf. pipe and tstg. Frontier by stages; perf. at 4,425-28 ft. with S.G.

Stanolind O. & G. Co. No. 1 Govt., C SE SE sec. 3-33n-96w. Cg. in Morrison at 8,363 ft.

Consolidated Oil Properties No. 3 Ewart, C SW SE sec. 16-1n-14w. T.D. 700 ft.; rng. form. test.

Ben Stewart No. 1 Darnell, NE SE sec. 26-3n-1w. Drlg. 914 ft.

Hot Springs County

Delaware Oil Co. No. 1 Govt.-Skelton, C SE SE sec. 2-43n-96w. Lost hole at 400 ft.; skd. rig; drlg. 200 ft. new hole.

California Expln. Co. et al No. 1 Govt., NE SE NE sec. 12-44n-97w. T.D. 3,807 ft.; drlg. on wool plug at 3,804 ft.

J. W. Bales No. 1 Govt., CWL SE SW sec. 28-43n-93w. T.D. 1,082 ft.; prep. to acd.; S.O. in Madison at 902-1,025 ft.

Lincoln County

The Place Oil Co. No. 1 Davis, SE cor. section 9-26n-113w, La Barge district, is reported a temporary completion at a total depth of 1,515 feet, making considerable gas with a large quantity of water. President L. W. Davis is quoted as saying that the company is moving in a portable rotary to drill eight shallow wells on as many separate permits the coming summer. These holes will determine geological conditions and validate permits.

H. C. Harris et al No. 1 Govt., SE NW NW sec. 23 21n-117w. Drlg. 200 ft.

Natrona County

Stanolind O. & G. Co. No. 8 T.P.-Midwest Oil, C NW SW sec. 35-40n-79w. Loc.; (first report).

Stanolind O. & G. Co. No. 26 T.P.-Wyo. Asso., C SE NW sec. 35-40n-79w. R.U.R.

General Pet. Corp. No. 1 Govt., C NW SE sec. 21-35n-77w. Cg. 7,157 ft.; sat. in 8-ft. stray sd. at 7,051 ft.; expect second Wall Crk. at 7,200 ft.

Niobrara County

The Continental Oil Co. No. 3-A Dielman, an outpost well on the southeastern side of the Lance Creek field, promises to be a good producer in the Leo sand, the second sand in the Minnelusa. It topped the sand at 5,343 feet and recovered saturated core. It is coring ahead at 5,385 feet with saturation continuing. It is on the same structural contour on the red beds as the Ohio Oil Co. No. 10 Lamb, half a mile to the northeast.

A. B. Cobb et al No. 3 Novick-Ong, SW SE SW sec. 6-35n-65w. Cmtd. 13⅜-in. at 286 ft.

MacKinnie Oil & Drlg. Co. No. 3 Thompson, NW NE NW sec. 7-35n-65w. Drlg. 1,960 ft.

Minnelusa Oil Co. No. 2 H. & M., NW NE NE sec. 8-35n-65w. R.U.R.

Continental Oil Co. No. 11 Tom Bell Cattle, SE SW SW sec. 27-36n-65w. Drlg. 2,382 ft.

Hewitt Bros. and Manning No. 1 Pecklow, SE SE SE sec. 1-35n-66w. Cmtd. 13⅜-in. at 300 ft.; W.O.C.

Continental Oil Co. No. 5 Joss, SW SW NE sec. 6-35n-65w. Drlg. 3,500 ft.

Ohio Oil Co. No. 10 Putnam, NW SE NW sec. 4-35n-65w. Drlg. 2,645 ft.

Argo Oil Co. No. 5 Ford, C SW SE sec. 33-36n-65w. Drlg. 3,412 ft.

H. D. Moore et al No. 1 Beregren, NW sec. 23-35n-63w. Drlg. 937 ft. in Sundance; top Morrison 587 ft.

Continental Oil Co. No. 3-A Dielman, SE SE SW sec. 5-35n-65w. Cg. 5,385 ft.

Park County

Paul Stock No. 1 Govt., SE SE NE sec. 20-53n-101. Rdy. to resume at 2,015 ft.

Ohio Oil Co. No. 4 Mack-O.P.C.-4, SE SW SE sec. 30-58n-99w. T.D. 3,092 ft.; P.B. to 2,850 ft.; cmtd. 8⅝-in. at 2,790 ft.; tstg.

Resolute Oil Co. No. 4 N. P., C NE NW sec. 21-57n-101. S.D. 8,657 ft.

Resolute Oil Co. No. 3 N. P., C NE NE sec. 20-57n-101. S.D. 8,670 ft.

Sublet County

An unconfirmed report says that the Ohio Oil Co. has moved in two portable rotary rigs to drill a num-

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ber of coreholes in the Green River Basin north of La Barge Creek and extending north into the Dry Piney district, this spring. The holes, it is said, will be drilled to depths ranging from 2,000 to 3,000 feet. In this interval it will cut several well-known sands in the district. The company has a large block of acreage in the district, including the old holdings of the Associated Oil Co. of California. It has done extensive geological work in the area, having sent in several seismograph crews in the past two years. A crew is now reported stationed at Pinedale, but whether it is working for the Ohio company is not stated.

Sweetwater County

The Rocky Mountain Drilling Co. No. 1 J. S. Lee, NE NW SE section 10-19n-104w, in Middle Baxter Basin, was completed at 3,650 feet for 6,600,000 feet of gas per day with a pressure of 450 pounds, in the Sundance, topped at 3,611 feet. The 8⅝-inch was cemented with 400 sacks at 3,615 feet. This is one of several wells started last fall in the district between North and South Baxter Basin and the only one which was drilled to the Sundance. These wells, which were widely scattered, resulted in one completion in the Frontier for 2,000,000 feet, another in the same horizon for 55,000 feet and one in the Dakota for 3,000,000 feet. One was dry and abandoned. Prior to this campaign very little drilling has taken place in the Middle Baxter Basin area.

The Farson Oil & Gas Co., which is composed mostly of Rock Springs business men, made a location for a test on a government lease in the Farson district in northwestern Sweetwater County. This location is in the NE section 18-25n-108w. The company leased the northeast quarter of section 18 and the west half of section 17 from the government under the new provisions of the Oil Leasing Act, which calls for 50 cents an acre rentals. There is some kind of a structure reported in that area, which is in the Bad Lands hills. Ray Phebus, who has been active for a number of years in the Big Horn Basin, is interested in the deal and did the geological work. "Happy" Barrington is reported to have agreed to drill the test for an interest.

Sinclair-Wyoming Oil Co. No. 78, SW SW NW sec. 11-26n-90w. Drlg. 1,590 ft.; Dakota at 1,548-49 ft.
Selegna Oil Co. No. 1 Union Pacific, SW SW sec. 11-20n-104w. T.D. 4,196 ft.; trying to free frozen D.P.

Weston County

Charles F. Martens No. 8, SE SE NW section 24-46n-64w, in the Osage field, was dry at a total depth of 1,682 feet.

Charles Stough No. 10, SE SW NW section 4-46n-63w, is pumping 2 bbls. per day from broken sand at 305 feet.

Patterson Oil Co. No. 19, CSL SE SE sec. 17-46n-63w. Drlg. in sd. at 763 ft.; top at 754 ft.; showing for a producer.
Chas. F. Martens No. 9, NE SW NE sec. 23-46n-64w. Drlg. below 400 ft.; (first report).
Chas. Stough No. 11, CSL SW NW sec. 4-46n-63w. Drlg. below 100 ft.; (first report).
Osage Trust Co. No. 29, NW SE SW sec. 14-46n-64w. Drlg. below 500 ft.; (first report).
John Brorphy No. 1 George, SW SE NW sec. 26-48n-64w. Drlg. 2,021 ft.; (C.D.); in top Leo sd. with S.O.&G.

MONTANA

Big Horn County

P. O. Oil & Gas Co. No. 1, NW NE NE sec. 25-9s-35e. Drlg. 340 ft.
E. L. Dana No. 1 Hardy, SW NW sec. 22-9s-35e. S.D. 700 ft.

Carbon County

R. C. Tarrant No. 1, 500 ft. W of C sec. 3-6s-18e. Spdg
R. C. Tarrant No. 2 Heare, NW SE NW sec. 14-6s-19e. T.D. 1,700 ft.; drlg. by tools.
Sha-Wa Pet. Co. No. 1 Govt., SW SW NE sec. 35-9s-23e. T.D. 3,223 ft.; P.B. to 3,060 ft.; fsg.
Miracle Oil Co. No. 2 Govt., CWL NE SE sec. 3-6s-23e Drlg. 2,371 ft.; 5½-in. at 2,360 ft.

Fergus County

Baugham & Singley No. 1 Skaggs, C NW SW sec. 7-15n-20e. S.D. 525 ft.

Glacier County

The Santa Rita Oil & Gas Co. No. 8 Tribal, C NE SW section 16-35n-6w, on the west side of the Cut Bank field, was dry and abandoned at 2,990 feet. The failure of this well was a considerable disappointment as it apparently limits the area of the producing pool in the Sunburst sand in that district. This is about the only part of the field in which there is any important production from the Sunburst. No. 8 Tribal is 1,980 feet west of the same company's No. 1 Lander, the biggest well ever completed in the field, which was brought in in the Sunburst sand early in 1936, making up to as high as 2,000 bbls. a day natural, and still making around 700 bbls. For a while it looked like a freak as nearby wells on the north, east and southeast failed to find a pay in the Sunburst. Then last year the Texas Co. and Santa Rita drilled one well each to the southwest and brought in good producers. No. 8 Landers was a key well on the west, but when it failed to encounter any well-defined Sunburst sand it again changed the picture. It had the Sunburst zone at 2,880-2,935 feet, dry except for a small show of oil at 2,925-29 feet. It had the top of the Cut Bank at 2,958 feet with a good show of oil at 2,960-65 feet, followed by water at 2,965-75 feet. Elevation is 3,839 feet.

The Glacier Production Co. No. 1 McNamar Unit, CEL SE NE section 15-36n-5w, an outpost well at the north of the gas area, which marks an extension of the pool in that direction, made 8,631,000 feet of gas on the last reported gauge at 2,655 feet, total depth, but is not yet listed as a completion. The sand is not as yet definitely identified as to whether it is the Sunburst or Cut Bank. It is only 2 feet in the pay and still testing.

There were four new operations in Cut Bank.

Nadeau Bros. No. 5 Farmers State Bank, CEL SE NE sec. 17-33n-5w. Spdg. 150 ft.
Glacier Prod. Co. No. 2 Eisler, SW NE SW sec. 5-33n-5w. R.O.G.
Santa Rita O. & G. Co. No. 1 Jordan, NW NW NE sec. 18-32n-5w. M.I.M.
K. D. Pardee No. 1 Drumheller, NE NW (C Lot 3), sec. 2-33n-6w. M.I.M.
Texas Co. No. 1 Lindquist, C SE SE sec. 17-32n-5w. Drlg. 2,695 ft.
Glacier Prod. Co. No. 1 McNamar, CEL SE NE sec. 15-36n-5w. T.D. 2,655 ft.; tstg.
A. B. Cobb No. 1 State, C NE NE sec. 30-37n-4w. T.D. 2,592 ft.; S.D. until spring.
Santa Rita O. & G. Co. No. 3 Govt., C SW SW sec. 4-32n-5w. Drlg. 2,325 ft.

Hill County

Burton & Hole No. 1 Waldrip, C SW NW sec. 12-32n-17e. Drlg. 631 ft.

Judith Basin County

Fletcher E. Hunt No. 3, NW SE NE sec. 30-14n-15e. Drlg. 1,875 ft.

Lewis and Clark County

Lewis & Clark Oil Synd. No. 1 Heilman, NW NW SW sec. 11-18n-5w. Drlg. 2,461 ft.

Park County

Ben W. Ryan No. 1 Burgee, SE SW NW sec. 28-2s-11e. Drlg. 1,278 ft.

Toole County

One of the best wells so far completed in the Rimrock pool on the west side of the Kevin-Sunburst field, which was the scene of considerable drilling last year, was brought in in Welch Brothers No. 2 Maggie Ward, SW SE NE section 29-35n-3w, at 1,765 feet, total depth, from the Ellis at 1,754-59 feet. It showed for 5

(Continued on Page 86)

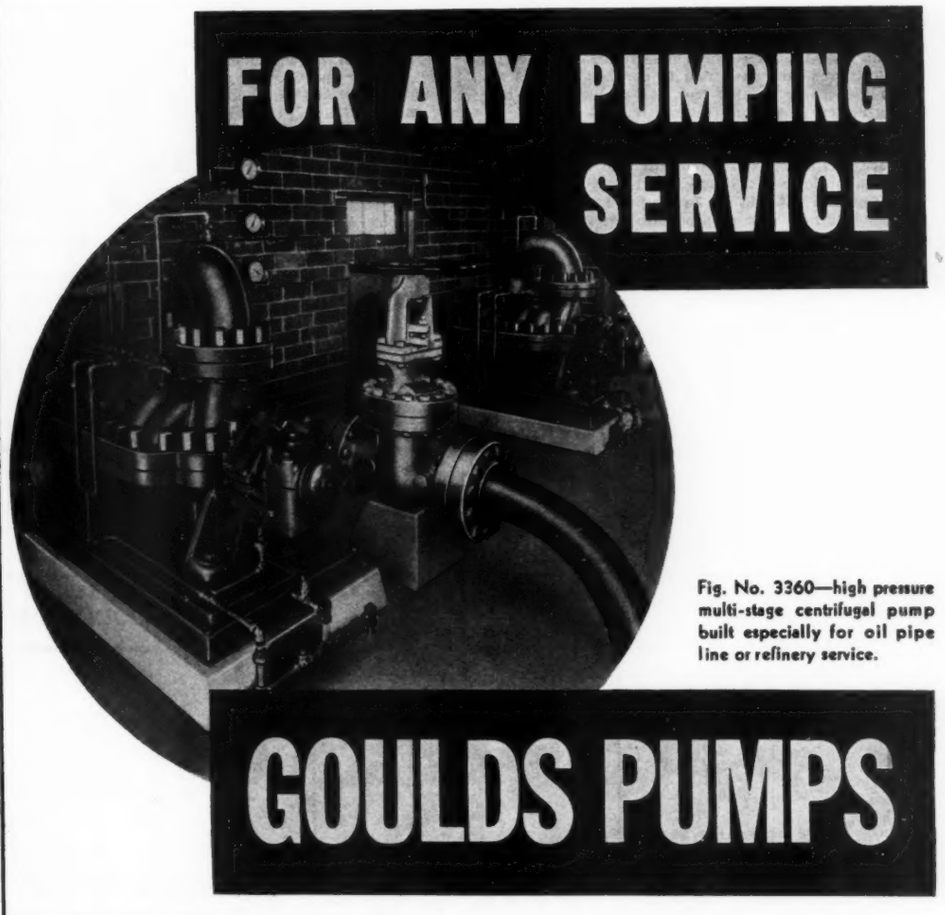

Fig. No. 3360—high pressure multi-stage centrifugal pump built especially for oil pipe line or refinery service.

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8273

Kansas Developments

By
DAL DALRYMPLE

North and South Extensions at Zenith Start 11 New Tests

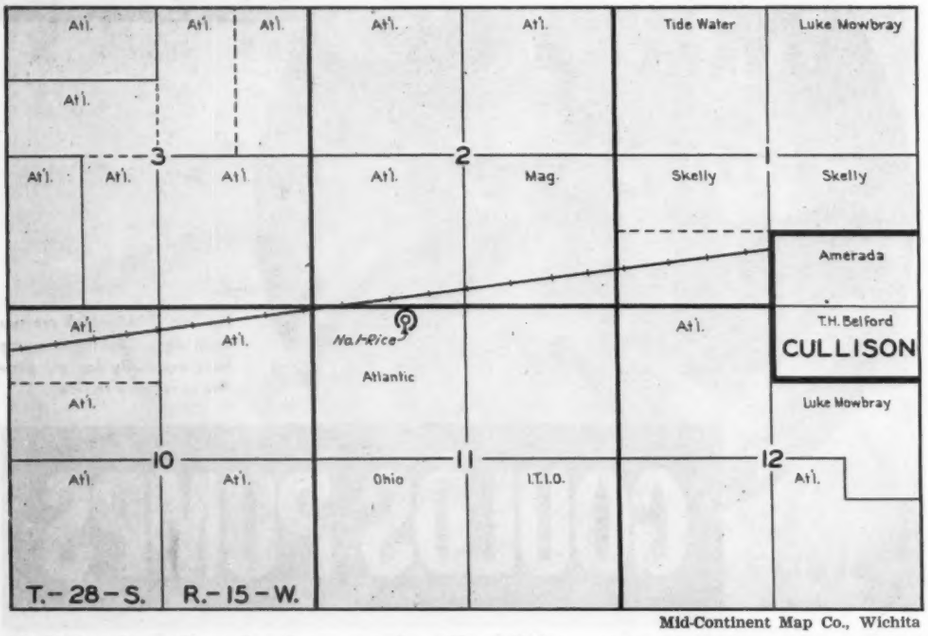
The Zenith pool of eastern Stafford County set a fast pace for other Kansas areas the past week, with north and south extensions apparently assured and locations for 11 new tests announced.

Stanolind Oil & Gas Co. No. 1 Martin, SE SE NW section 14-24-11w, one-fourth mile north of Zenith production was bottomed in Misener sand at 3,802 feet and oil rose 2,600 feet in the hole in two hours. Operators were preparing to test.

The same company's No. 1 Paulsen, NW SW NE section 26-25-11w, one-fourth mile south of Zenith production, found oil saturation in cores at 3,828-33 feet, set 7-inch casing at 3,825 feet, and standard tools were being rigged up for completion.

The outlook at a western extensioner was not so good. This was Stanolind Oil & Gas Co. No. 1 McComb, NE cor. section 27-24-11w, one-half mile west of Zenith. It was shut down at 3,868 feet, with only a small showing of oil and water in the Zenith pay horizon.

One-half mile east of production at Zenith, Parker Drilling Co. No. 1 McComb, SW SW NW section 24-24-11w, was drilling below 3,100 feet. It was on a farm-out from Sunray Oil Co. Pure Oil Co. No. 1 Krey, SW NW SE section 14-24-11w, offsetting production in the north end of the pool, cored saturation at 3,791-96 feet in Misener sand and set 7-inch casing.



Mid-Continent Map Co., Wichita

Shell Petroleum Corp. has begun work at No. 1 Boley, section 11-28-15w, newest wildcat in Pratt County, Kansas

Testing was under way at Westgate-Greenland Oil Co. and Amerada Petroleum Corp. No. 1 Johns, SE cor. section 25-22-5w, wildcat northeast of Hutchinson in Reno County. It had Simpson sand at 3,897 feet, total depth 3,901 feet, swabbed 15 to 20 bbls. of oil an hour in preliminary tests and was estimated good for 500 bbls. daily.

Jones & Shelbourne and others No. 1 Kuhnle, SE SE NW section 4-15-12w, pool opener in Russell County, pumped 945 bbls. of oil naturally when tested the past week. It may be acidized before completion.

E. & H. Oil Co. No. 1 Elder, SE SE NE section 36-33-10, Sedan area, Chautauqua County, has spudded. Dorris Drilling Co. has the contract.

Wildcat Activity

Carter Oil Co. and L. H. Wentz No. 1 Ely, NE NW section 6-32-14w, wildcat in western Barber County, found Arbuckle lime at 4,953 feet and was dry and abandoned at 4,980 feet, total depth. It had slight showings of gas in Kansas City lime at 4,122-85 feet and in Viola lime at 4,700-32 feet, water in Simpson formation at 4,840-85 feet and in Arbuckle lime at 4,965 feet.

Manning & Martin and others No. 1 Lynd, NW NW SW section 16-11-21w, Trego County wildcat, topped Arbuckle lime at 3,949 feet and was dry and abandoned when water intruded at 4,057 feet, total depth.

Twin Drilling Co. and others No. 1 Hall, NW SW NE section 1-12-17w, wildcat in Ellis County, had nothing showing and was dry and abandoned at 3,621 feet, total depth. Top of Arbuckle lime was 3,577 feet.

Marshal Drilling Co. and others No. 1 Anderson, SW SW NW section 23-16-24w, Ness County wildcat, had spudded but was abandoned.

Wildcats included in the week's first reports were: Stanolind Oil & Gas Co. No. 1 Carlile, NE SE SW section 22-25-12w, southern Stafford County, moving in material.

Palmer Oil Corp. No. 1 Houser, SE NW SW section 13-30-3e, northwest of the Trees area in Cowley County, was drilling below 300 feet.

Ward McGinnis No. 1 State Bank, NW NE NE section 14-26-15, south of Yates Center in Woodson County, was a machine.

Tri-County Gas Co. No. 1 Thornbrough, NE SE NE section 19-25-35w, in southeastern Kearny County, was moving in material.

Lario Oil & Gas Co. No. 1 Hulme, C E half NE NE section 21-20-12w, southwest of Ellinwood, Barton County, location.

Barton County

Shell Petroleum Corp. No. 1 Hoffman C, NW NE SE section 1-16-14w, Trapp district, Barton County, found Arbuckle lime at 3,312 feet, total depth 3,336 feet, swabbed 357 bbls. of oil in 12 hours and was acidized. It then pumped 330 bbls. of oil in the first four hours and made potential of 1,591 bbls. of oil.

Same company's No. 1 Batt B, SE cor. section 2-16-14w, pumped 278 bbls. of oil in six hours after acidizing with 6,000 gallons and made potential of 920 bbls. of oil. Arbuckle lime was topped at 3,287 feet, total depth 3,314 feet.

Shell Petroleum Corp. No. 2 Schneider B, NW NE NW section 1-16-14w, had Arbuckle lime at 3,283 feet, total depth 3,294 feet, was acidized and pumped 189 bbls. of oil in four hours, making potential of 756 bbls.

Cities Service Oil Co. No. 1 Stoskopf, NE NE NW section 17-16-13w, made potential of 543 bbls. of oil, with 150 bbls. of water, after acid treatment. Top of Arbuckle lime was 3,390 feet, total depth 3,406 feet, and plugged back to 3,405 feet to complete.

Phillips Petroleum Co. No. 4 Kraft, NE NW NE section 10-17-11w, Kraft area, found Arbuckle lime at 3,300 feet, total depth 3,342 feet. plugged back to 3,331 feet and was completed as a 15-bbl. minimum well.

Stanolind Oil & Gas Co. No. 1 Schartz, NE NE SE section 34-19-11w, Silica district, had a hole full of water and was abandoned at 3,347 feet.

New work in Barton County: Stanolind Oil & Gas Co. No. 1 Knipp, SE SW SW section 34-19-11w, rigging up rotary; Lebow No. 3 Steckel, NW NW SW section 1-20-11w, building rig; Stanolind Oil & Gas Co. No. 4 Dick, SE SE NW section 3-20-11w, location; same company's No. 4 Stueckemann, SE NE SE section 11-20-11w, location; Indian Territory Illuminating Oil Co. No. 8 Bryant, NE SE NW section 25-20-11w, location; Cities Service Oil Co. No. 3 Bitter B, SW SW SE section 8-16-13w, location; Indian Territory Illuminating Oil Co. No. 3 Hoffman, SW SE NE section 1-16-14w, location; Shell Petroleum Corp. No. 1 Hoffman B, NW NW NE section 12-16-14w, location.

Estimated Daily Production

Estimated daily production for Kansas for the week ending April 2, and for the preceding week, was as follows:

	Barrels	
	April 2	March 26
Oxford City	1,750	2,000
Burrton	11,425	11,525
Ritz-Canton	6,550	6,475
Graber	2,625	2,900
Hollow-Nikkel	3,775	3,850
Lerado	1,200	1,125
Voshell	3,075	3,100
Wellington	2,300	2,350
Ellsworth County:		
Lorraine	2,675	2,825
Other pools	1,325	1,285
Rice-Barton counties:		
Bloomer	2,325	2,975
Chase	5,675	6,125
Geneseo	2,050	2,075
Raymond	1,100	1,125
Silica	12,525	15,500
Silica-South	2,400	3,100
Keesling	1,125	850
Wherry	4,050	4,675
Miscellaneous Rice	2,615	3,635
Miscellaneous Barton	6,610	5,825
Russell County:		
Fairport	1,845	1,935
Gorham	1,395	2,005
Russell	785	1,175
Sullivan	7,245	8,490
Trapp	8,335	9,815
Miscellaneous Russell	7,955	7,030
Sedgwick County:		
Valley Center	1,010	1,030
Miscellaneous	2,840	2,920
Ellis County:		
Bemis	4,650	6,425
Miscellaneous	3,460	2,640
Kingman County	627	570
Stafford County	2,440	2,270
Greenwood County	9,100	9,500
Butler County	16,000	16,100
Other fields	21,513	26,525
Total Kansas	166,375	178,750

Russell County

The only completion of the week recorded in Russell County was at Central Petroleum Co. and others No. 4 Rouback A, NW NE NE section 15-14-15w, Gorham area. It had Gorham sand at 3,269-70 feet, total depth, and made potential of 900 bbls. of oil.

Operations reported for the first time included Cities Service Oil Co. No. 1 Vaughn, SW cor. section 17-14-14w, an old well, deepened from 3,034 feet to 3,052 feet, preparing to acidize; Darby Petroleum Corp. No. 4 Dumler C, SW SE NE section 11-14-15w, rigging up; Sinclair Prairie Oil Co. No. 5 Hefferman, SE NW NE section 26-15-13w, an old well, rigging up to deepen; Gulf Oil Corp.

No. 11 Michaelis, SW NE SW section 32-15-13w, drilling at 308 feet; Coralena Oil Co. No. 1 Finney, SE SE NE section 30-14-13w, rig; Continental Oil Co. No. 2 Rein, SE SE NW section 27-14-13w, location; Lauck & Moncrief No. 1 Miller, NE NW NW section 29-13-14w, drilling at 745 feet; Phillips Petroleum Co. No. 3 Downing, NE SE SW section 19-13-14w, rig.

Ellis County

One well was completed in Ellis County. It was Cities Service Oil Co. No. 9 Hall B, NE SW NW section 26-11-17w, Bemis district. Arbuckle lime was found at 3,419 feet, total depth 3,435 feet, and it made potential of 2,402 bbls. of oil daily.

Operations reported for the first time: Gulf Oil Corp. No. 3 Pearl, NW NE SE section 13-11-17w, rigging up rotary; Cities Service Oil Co. No. 10 Hall B, C W half E half SW section 26-11-17w, location; Republic Natural Gas Co. No. 2 Bemis, NE SW SW section 21-11-17w, set 10-inch casing at 1,162 feet; Margay Oil Co. No. 4 Johnson, NE SW SE section 22-11-17w, rig; Shell Petroleum Corp. No. 6 Rumsey, SE NW NW section 23-11-17w, rig; Margay Oil Co. No. 3 Bemis E, SE NW NW section 28-11-17w, location; Hays & Sackrider No. 1 Greher, NE cor. section 35-12-16w, pits; Republic Natural Gas Co. No. 1 Joy, NW NE NW section 14-12-18w, rig.

Rice County

Continental Oil Co. No. 2 Bolton, C E half E half NW section 31-18-7w, Geneseo area, Rice County, had Arbuckle lime at 3,212 feet and was bottomed at 3,216 feet. It was acidized, pumped 345 bbls. of oil in four hours and made potential of 1,994 bbls. of oil.

New work in Rice County: Continental Oil Co. No. 2 Jones, NW NW NE section 36-18-8w, building rotary rig; Magnolia Petroleum Co. No. 2 Sharpe, SW SW NW section 8-20-9w, rig; Continental Oil Co. and others No. 6 Nickel, SE NE SW section 13-18-8w, location; same company No. 1 Hamilton, SW SE SE section 13-18-8w, rig; Mid-Plains Oil Co. No. 1 Engelland, NW NW SW section 15-21-7w, rig.

Ellsworth County

Cities Service Oil Co. and others No. 1 Mollhagen, C W half W half NE section 29-17-9w, Ellsworth County, found Arbuckle lime at 3,238 feet, total depth 3,246 feet, pumped 222 bbls. of oil in four hours and made potential of 1,332 bbls.

Skelly Oil Co. No. 4 Zink, SW SE SW section 32-17-10w, Stumps area, flowed 115 bbls. of oil in one hour after acidizing with 5,000 and 8,000 gallons, but production fell off to 10 bbls. of oil and 30 bbls. of water in the next 17 hours and it was completed as a 15-bbl. minimum well. Kansas City pay was topped at 2,991 feet, total depth 2,999 feet, and it was plugged back to 2,991½ feet.

McPherson County

Ohio Oil Co. No. 15 Decker, NE NW SE section 20-21-1w, Graber pool, McPherson County, topped Hunton lime at 3,295 feet and was bottomed at 3,330 feet. It was acidized with 2,000 gallons and made potential of 606 bbls. of oil.

Rooks County

Vickers Petroleum Co. No. 2 Luhman, NE SW SE section 11-9-16w, Laton pool, Rooks County, had Kansas City lime at 3,229 feet, total depth 3,313 feet, was acidized, pumped 109 bbls. of oil the first 12 hours, and then pumped 80 bbls. in 24 hours.

Broadview Oil Co. No. 1-A Livengood, SE NE NW section 11-9-16w, was a location in the Laton area. Republic Natural Gas Co. No. 1 Riddler, SE SW SW section 31-10-17w, was building rotary rig. Carter Oil Co. No. 1 Leist, SW cor. section 10-8-17, was a rig. Leavell and others No. 1 Larson, SW cor. section 1-9-17w, had dug cellar and pits.

Barber County

Two gas wells were completed in the Medicine Lodge field, Barber County. Barbara Oil Co. No. 2 Thompson A, C NW section 22-33-13w, had Chat pay at 4,605 feet, total depth 4,660 feet, and produced 7,500,000 feet of gas.

Same company's No. 2 Root B, CEL E half SW section 15-33-13w, produced 5,500,000 feet of gas from Chat pay at 4,602-22 feet. It had Simpson sand at 5,013-45 feet, total depth, and was plugged back to 4,792 feet to complete.

Barbara Oil Co. No. 2 McKee, C W half NE section 28-33-13w, had dug cellar.

Sumner County

Stelbar Oil Corp. No. 6 Rothrock, SW NW NE section 4-32-1w, Wellington pool, Sumner County, had Chat at 3,645 feet, was bottomed at 3,695 feet, acidized and made potential of 584 bbls. of oil.

Cowley County

Phillips Petroleum Co. No. 1 Newton, SW SW NW section 15-30-4, Rock area, Cowley County, had Bartlesville sand at 2,758 feet, total depth 2,786 feet, was shot and made potential of 284 bbls. of oil.

E. B. Shawver No. 4 Shawver, SE SE NE section 3-30-4, North Rock area, was dry and abandoned at 2,880 feet, total depth.

Smith and others No. 1 Wilson, SE SW NW section 9-33-6, was drilling below 400 feet.

Butler County

Isador Molk No. 12 Loomis, SW NW SW section 15-27-4, North Augusta area, Butler County, had Wilcox sand at 2,500-10 feet, total depth, was shot and completed for 40 bbls. of oil daily.

Phil Polhamus No. 1-A Albers, C W half SE SE section 21-25-4, topped Mississippi pay at 2,559 feet, total depth 2,600 feet, and pumped 10 bbls. of oil and 20 bbls. of water daily.

Wixon No. 4 Dohren, SE SW NW section 11-25-3, was a machine. Rex & Morris No. 1 Johnson, SW SE SE section 20-26-7, was drilling below 800 feet. Adair & Morton No. 4 Brandto, SW SE NE section 15-28-7, was a machine.

Greenwood County

Katz Oil Co. No. 3 Christy, NW SW SE section 12-26-9, Reece area, Greenwood County, had Mississippi pay at 2,130-44 feet, total depth, and pumped 25 bbls. of oil daily.

Same company's No. 4 Christy, SE SE SW section 12-26-9, was a location.

Stafford County

Eleven new tests were reported in the Zenith area, Stafford County, the past week, as follows: Stanolind Oil & Gas Co. No. 1 Hayes, SW SW SE section 11-24-11w, rigging up rotary; Pure Oil Co. No. 2 Krey, NW NW SE section 14-24-11w, cellar; same company's No. 3 Krey, NW SW SE section 14-24-11w, cellar; Sinclair Prairie Oil Co. No. 1 Krey, SW SW NE section 14-24-11w, moving in material; Stanolind Oil & Gas Co. No. 2 McComb, NE NE SW section 14-24-11w, location; same company's No. 2 Volker B, SE SW SW section 14-24-11, location; same company's No. 3 Volker B, SE SE SW section 14-24-11w, location; Stanolind Oil & Gas Co. and others No. 4 Ferris B, NE NE NW section 23-24-11w, location; same company's No. 2 Hartnett, SW SW SE section 23-24-11w, rotary rig; same company's No. 2 Paulsen A, SE SE SW section 23-24-11w, rotary rig; same company's No. 2 Volker, NW NW NE section 23-24-11w, location.

Additional new work in Stafford County: Stanolind Oil & Gas Co. No. 1 Unstead, SW cor. section 28-21-12w, Sittner pool, location; same company's No. 1 Harris, NE cor. section 32-21-12w, location; Atlantic Refining Co.

IMPORTANT ANNOUNCEMENT!

If you are interested in learning of the SAFEST and CHEAPEST insurance available for your High Pressure Wells, don't fail to read the OTIS Advertisement in the April 14th (All-Texas) issue of this publication.

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BRANCHES: Houston, Wichita Falls and Kermit, Texas; Oklahoma City and Ada, Okla.; Hobbs, New Mexico; Rodessa, Louisiana; Wellsville, N. Y.; and Glendale, Calif.

and Phillips Petroleum Co. No. 1 Alexander, C W half W half NW section 26-24-13w, rig; Stanolind Oil & Gas Co. No. 2 Teichman, NW NW SE section 13-22-13w, rigging up rotary.

Scattered First Reports

In Reno County, Transwestern Oil Co. No. 6 Teten, NE NW SE section 12-23-4w, was a rotary rig. Nadel & Gussman No. 1 Muller, C E half E half NW section 19-24-4w, was a location.

In Harvey County, Wilhelm & Bennett No. 2 Gouldner, C S half N half NW SE section 19-23-3w, was rigging up rotary.

In Pratt County, Atlantic Refining Co. No. 1 Rice, NW NE NE section 11-28-15w, was a location.

In Sedgwick County, National Refining Co. No. 1 Wilson, NE SE SE section 36-27-2e, was a rig. Prunty Production Co. No. 1 Rausch, NW SW SE section 16-25-1e, was a location.

In Woodson County, C. R. Craft No. 1 Pratt, NW NW SW section 36-26-15, was drilling below 1,490 feet. Petty and others No. 1 Tipton, NW NW NE section 31-25-14, was a machine. Chris Sheedy No. 13 Klick, SW NW SE section 20-25-14, was a machine. Aikman No. 1 Haas, SW SW NW section 25-23-14, was a location.

In Kearny County, Tri-County Gas Co. No. 1 Masonic Home, NE SE NE section 6-26-35w, was a location.

A Nebraska Wildcat

Heimerich & Payne No. 1 Hansen, C N half SW NW section 24-15-31w, was a rotary rig. This wildcat is northwest of North Platte, in Lincoln County, Nebraska.

Gulf Coast Fields

(Continued from Page 66)

was broken by Stanolind Oil & Gas Co. No. 3-B Calcasieu National Bank located in the South Elton field, Jefferson Davis Parish. The hole is bottomed at 13,000 feet and a Schlumberger survey was being made before carrying it deeper. Prior to drilling this test, the record for deep drilling in this district was held by Texas Co. No. 1 Horseshoe Bayou in St. Mary Parish which reached a depth of 12,261 feet.

In the North Crowley field, Acadia Parish, Humble Oil & Refining Co. was preparing to test a new sand in No. 1 Lee Smith in section 44. Seven-inch casing was cemented at 8,293 feet and the test will be made through perforated casing in 14 feet of oil sand topped at 8,279 feet. The main sand is found at approximately 8,100 feet.

COMPLETIONS ON TEXAS COAST

Brazoria County

Hastings field: Stanolind Oil & Gas Co. No. 10 F. N. Brown, 6,080 feet, perforated casing 6,015-66 feet, 506 bbls., ¼-inch choke; No. 15-A H. H. Ford, 6,080 feet, perforated casing 6,056-77½ feet, 543 bbls., ¼-inch choke; No. 6 Matsushita, 6,080 feet, perforated casing 6,058-78 feet, 587 bbls., ¼-inch choke; No. 5 Remley, 6,080 feet, perforated casing 6,038-78 feet, 566 bbls., ¼-inch choke. Lockridge field: McCurdy & Johnson No. 1-B State, 6,444 feet, perforated casing 6,412-67 feet, 319 bbls., ¼-inch choke, 3 per cent salt water. Manvel field: Sam E. Wilson, 4,067 feet, 430 bbls., quarter-inch choke. Old Ocean field: Harrison & Abercrombie No. 1 Osberne, 10,413 feet, 199 bbls., various chokes; No. 5 Bernard River Land & Development Co., 10,401 feet, 232 bbls., various chokes.

Chambers County

Seabreeze field: Sun Oil Co. No. 1 J. T. White, 8,485 feet, 726 bbls., ¼-inch choke.

Galveston County

Dickinson field: Mid-State Oil Co. No. 2 Joe Piazza, 8,153 feet, perforated casing 8,048-52 feet, 65 bbls., ¼-inch choke.

Hardin County

Silsbee field: Humble Oil & Refining Co. No. 1 B. L. Kirkendall, 7,050 feet, abandoned.

Harris County

Eureka Heights field: Jack Frazier No. 1 Vollmer-Neiman, 7,730 feet, perforated casing 7,697-7,722 feet, 616 bbls., ¼-inch choke. Friendswood field: Humble Oil & Refining Co. No. 1 Goodwin, oil sand 5,932-6,042 feet, 573 bbls., ¼-inch choke; No. 4-A E. A. Grey, oil sand 5,919-6,041 feet, 681 bbls., ¼-inch choke; No. 2 B. A. Whitcomb, sand 5,797-6,044 feet, 595 bbls., ¼-inch choke. Tomball field: Humble Oil & Refining Co. No. 3-B Kobs, 5,601 feet, perforated casing 5,567-95 feet, gas well; No. 3 Holderrieth, 5,548 feet, perforated casing 5,542-47 feet, 24 bbls. per hour, ¼-inch choke.

Jefferson County

Amelia field: Stanolind Oil & Gas Co. No. 4 Kulh-Dowles, 5,890 feet, 56 bbls., 12 hours pumping. Nome field: Shell Petroleum Corp. No. 8 Carpenter, sand 6,010-43 feet, 492 bbls., ¼-inch choke.

Liberty County

Hardin field: Sun Oil Co. No. 1 A. A. Hisey, 7,674 feet, 673 bbls., ¼-inch choke.

Matagorda County

Palacios field: Atlantic Refining Co. No. 3 Foley Land Co., 8,900 feet, perforated casing 8,826-40 feet, 72 bbls., ¼-inch choke.

Polk County

Segno field: Gulf Oil Corp. No. 6 G. F. Wing, 5,190 feet, 504 bbls., ¼-inch choke.

Michigan Field Report

By O. C. PRESSPRICH

Edenville's Disappointment; Bad Roads Cause Shutdowns

SAGINAW, Mich., Apr. 4. — Watchful expectancy hovered over Midland County's Edenville oil field as two tests enter the Dundee limestone as the week ended—a week marked by disappointment over the apparent failure of Smith Petroleum Co. No. 1 C. W. Snyder, SW SW SE section 22-16n-1w, three locations north of the discovery.

All operators watched with deepest interest the progress of drilling at Mammoth Producing & Refining Co. No. 1 Higgins, SW NE NE section 27-16n-1w, direct north offset of Chapman Oil Co.'s discovery well of two months ago. The Mammoth offset was drilling in the Dundee limestone Saturday, with progress reported slow through hard rock.

Another test, expected to show the possibilities of the area lying south of the field's two prolific producers, was Sun Oil Co. No. 1-A State-Jerome, NW NW NW section 3-15n-1w, Jerome Township, also drilling in the Dundee. The Sun location is 1½ miles south of the Chapman discovery well.

Developments of the week in the Edenville area provided the highlight in the Michigan fields resulting in apparent failure of the third Edenville test, Smith Petroleum Co. No. 1 C. W. Snyder. While the test failed to log an open flow or small commercial show, operators planned to drill ahead in an attempt to hit a deeper oil flow, or at least learn the depth and character of the formation. A shutdown for probably a week was ordered Friday owing to impassible roads into the location. The first showing of oil was logged at 3,807 feet. About 200 feet of oil was reported in the hole overnight. The test was bailed and deepened to 3,817 feet, and filled over a 10-hour period with approximately 75 feet of oil. It was deepened to 3,836 feet Thursday with no change. The Smith test's formations were reported about 9 feet lower than in the Chapman discovery, a quarter mile south. The Dundee limestone was topped at 3,752 feet. Operators said they would drill on to water, then plug back and probably acid treat. Such testing will provide valuable data on the possible northerly extension of the present two-well field, which in the past two months has had Michigan oil circles buzzing. Mammoth's west offset of the Chapman discovery continued to produce about 40 bbls. hourly, strictly pinched in. A marked absence of Dundee porosity was reported at the Smith test as compared with the Chapman and Mammoth tests.

Spring road conditions and seasonal rains, which converted into quagmires inlet highways to Michigan's oil fields all but called a halt in drilling and transportation of equipment the past week.

The extent of the general suspension was apparent when drilling in the rich Sherman Township oil pool in Isabella County was at a standstill for the first time in nearly two years, while the prolific Buckeye field of Gladwin County brought in only one producer. Many drilling wells were shutdown, and have been for more than a week because operators were unable to transport crews or equipment to wells which ordinarily would have entered production.

With load restrictions being enforced by the state highway department on trunklines and county highways, and roads leading to field locations, practically impassable to automotive equipment, transportation of supplies was impossible. One company resorted to transportation of its drilling crews by motorboat on the Tobacco and Tittabawassee rivers to reach an interior location in Midland County's Edenville field, to save a 6-mile hike through mud.

Three of the six new producers of the week were in Allegan County, in southwestern Michigan, which also recorded a dry test. Buckeye and Tobacco townships of Gladwin County each developed a producer, as did Sherman Township of Isabella County. This, in brief, is the production summary for the week.

Allegan County

Two producers and a dry test were recorded in Salem's productive pool, in Allegan County, led by Muskegon Oil Corp. No. 4 Goodman, NE NW NW section 22-4n-13w, a 450-bbl. producer after acid treatment. Lentz & Miller No. 1 Hardy, NE NE NW section 21-4n-13w, gauged 200 bbls. daily after acid, while A. G. Ghysels Trust No. 3 Clark, SE SE SE section 16-4n-13w, an attempt to extend production northward from proved locations, resulted in failure and will be abandoned.

Allegan County—Dorr Township

A significant southwestern test of Eureka Development Co. No. 1 Widenfeller, NE NW SW section 29-4n-12w, came in this past week when acid treatment resulted in a 250-bbl. producer. The test was labeled by operators as the discovery well in the area and heralded further development of the sector. Coming into acidized production, the test was shutdown after flowing nearly 1,000 bbls., due to lack of storage facilities. Storage is being rushed to the location.

Gladwin County—Buckeye Township

A lone producer in the Buckeye field, to uphold a continuous weekly production record unbroken for the last year, was Robert L. Tope No. 6 Ludwig-Buehler, SE NW NE section 26-18n-1w, a 150-bbl. natural producer. The well is an interior location surrounded by favorable producers.

Gladwin County—Tobacco Township

Favorable indications were reported at Burris, Munger & McCollister No. 1 McMahon, NW NE NW section 1-17n-1w, where drillers awaited supplies to acidize the test. Approximately 1,500 feet of oil was reported in the hole last Friday. The test is a southerly extension of development in section 36 of Buckeye and is bounded on the extreme east side of the section by two dry tests.

Isabella County—Sherman Township

Pure Oil Co. No. 2 Beutler, SW NW NE section 33-15n-6w, one of three wells drilling in Sherman Township, was the only recorded new producer of the week, with a gauge of 525 bbls. after acid.

California Field Report

By
L. P. STOCKMAN

Deepest Hole in the World Was Drilling at 15,004 feet

LOS ANGELES, Calif., Apr. 4.—Continental Oil Co. has reached a depth of 15,004 feet in No. 2-A Kern County Land, a wildcat in the Wasco district of Kern County in the San Joaquin Basin, and at last reports the bit was still going ahead. A core at 14,977 feet to 14,990 feet showed the formation to be a sandy shale in contrast with the hard dark shale that had been present for the last several hundred feet. The sandy shale now present is what the company has been looking for, and it is therefore probable that drilling operations will be concluded within the next week or 10 days unless the outlook definitely improves. The sandy shale member in the bottom of the hole has excellent porosity in contrast with the hard dark shale previously cored which had practically no porosity, and the upper part of the core showed a small reaction in acetone.

Equipment manufacturers should feel encouraged as this deep record proves that the limit of present equipment has not yet been reached under careful supervision and safe drilling. One of the most interesting features is the fact that the hole is practically straight. The maximum deviation from the vertical has at no time been over 15 feet which accounts in part for the phenomenal depth record.

Superior Oil Co. completed an excellent well in the Rio Bravo field of Kern County and while it was pinched in to 850 bbls. per day the initial flow indicated a potential of approximately 8,000 bbls. per day. The completion was No. 1 Geissinger in section 35-28-25. It tanked 740 bbls. in the first 21 hours. After the mud had been cleaned out the bean was reduced to 14/64-inch. The oil tests 38.1 degrees, and pressures on the tubing and casing are 1,925 pounds and 1,350 pounds, respectively. This well is east of Union Oil Co. discovery well. Superior No. 2 Wagner is rotating ahead at 11,292 feet and should be completed in the immediate future. This company's No. 2 Geissinger was bottomed at 11,288 feet and is producing from 50 feet of oil sand as a string of 7-inch casing was landed at 11,238 feet as a water string. No. 2 Wagner is already deeper than Superior No. 1 Wagner and No. 1 Geissinger and there is further evidence that the Rio Bravo structure is dipping to the southeast as Superior No. 1 Ruhl is alreay down 11,310 feet without picking up the pay. This tends to indicate that the apex of the Rio Bravo structure is northwest of Union's discovery well.

Wilmington

Seven new wells which showed an aggregate initial daily production of 15,646 bbls. were completed in the Wilmington field in the past week and 10 additional potential producers are expected this week. Production has been reduced approximately 30,000 bbls. per day by reducing the maximum daily well production from 2,500 bbls. to 1,000 bbls. and shortening the open flow period.

General Petroleum Corp. completed two wells and should have another, No. 15 Harbor Community, on production within a few days. On property leased from the Ford Motor Co., General Petroleum completed No. 39 flowing 1,605 bbls. of 25.3-gravity oil daily from 4,100 feet. This well was finished with an 8⅝-inch liner including 561 feet of 50-mesh landed on bottom and cemented through perforation at 3,534 feet. The company's No. 3-1 Channel Community registered a much smaller production as it was finished flowing 176 bbls. from the Ranger zone at 3,165 feet. Production of this new well, which is flowing through a 40/64-inch bean under a tubing pressure of 70 pounds and a casing pressure of 225 pounds, tests 15.6 degrees and shows a cut of less than 1 per cent.

Bankline Oil Co. No. 3 Union Pacific was brought in flowing 5,600 bbls. per day from 3,895 feet, flowing from three zones simultaneously. It produced 800 bbls. of 16.3-gravity oil from the Ranger zone, 1,800 bbls. of 24.9-gravity oil from the upper Terminal zone and 3,000 bbls. of 28.5-gravity oil from the lower Terminal zone.

Hancock Oil Co., which holds a lease in the highly productive section of the field, completed No. 5-A Harbor flowing 4,255 bbls. from the Ranger and upper and lower Terminal zones. It is bottomed at 4,047 feet and was finished with an 8⅝-inch multiple-zone oil string which carried perforations from 2,890 feet to 4,047 feet to take care of Terminal zone production and from 2,355 feet to 2,710 feet to take care of Ranger zone production. Between the upper and lower Terminal zones the company used 40 feet of blank pipe. Ranger zone production, which is flowing through a 40/64-inch bean, is clean and tests 18.9 degrees, while production from the upper and lower Terminal zones tests 26.9 degrees flowing through a 1-inch bean.

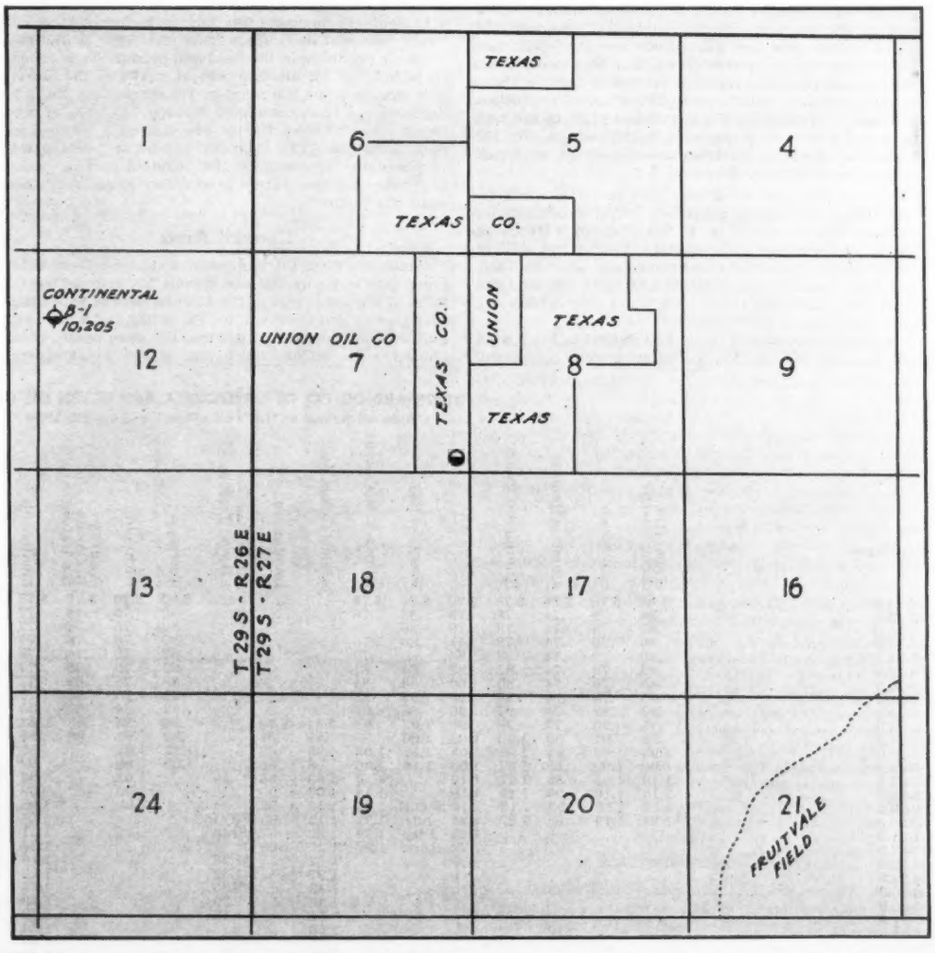
Richfield Oil Corp., which is starting a development program involving a minimum of 20 wells, completed No. 1 Gurnsey, flowing 485 bbls. of 17.8-gravity oil daily from 2,970 feet after finishing the hole with 512 feet of 6⅝-inch liner including 347 feet of 80-mesh screen landed at 2,969 feet. Previous to being swabbed on production the hole was washed with acid and then gravel packed. No. 1 Gurnsey was originally carried down in search of deep production but after finding the Terminal and Ford zones barren was plugged back from 6,078 feet.

The Termo Co. completed its first well in the Wilmington field a few days ago when No. 2-G Long Beach Harbor Commission on Terminal Island was finished flowing 3,250 bbls. of clean 27.5-gravity oil from the upper and lower Terminal zones at 3,995 feet. It was beaned back to 1,000 bbls. per day immediately subsequent to completion. Top of the upper Terminal zone was found at 2,860 feet and top of the lower Terminal zone at 3,340 feet. Allied Petroleum Co. completed No. 27 Wilmington in the Ranger zone flowing 275 bbls. of exceptionally clean 16.4-gravity oil daily through a 22/64-inch bean. This new well was completed with 407 feet of 6⅝-inch liner including 390 feet of perforated landed at 2,992 feet and 2,700 feet of 2½-inch tubing with packer.

Republic Petroleum Corp., discoverer of the El Segundo field, was the successful bidder for the Title Insurance & Trust property, each of Universal Oil Corp. No. 2 Newport, a recent completion, and contemplates immediate development. Republic's new lease is along the north boundary of ship channel 3. Hollywood Oil Co. has just closed a lease on the Baxter property located east of Richfield Oil Corp.'s Pacific Dock lease in the northeastern end of the field. On the Pacific Dock lease Richfield Oil Corp. has taken out permits for 19 wells including four rigs erected during the past week.

Santa Maria

Drilling operations in the Santa Maria Valley field of Santa Barbara County resulted in the completion of five new wells which showed an aggregate initial daily production of 7,977 bbls. Signal Oil Co. completed No 3 Romalho in section 27-10-34 flowing 4,140 bbls. of clean 15.6-gravity oil daily from 4,846 feet. This is the third successful completion of the company on the 113-acre Romalho lease. Pacific Western Oil Co. completed No. 3 on the Samarin lease owned by the proprietor of the Santa Maria Inn, flowing 2,301 bbls. of clean 16.2-grav-



The Texas Co. is starting a wildcat in the Rosedale district of Kern County northwest of the Fruitvale field and east of a wildcat drilled by Continental Oil Co. to 10,205 feet. The new location is a seismograph high and will bear watching

ity oil daily from 4,904 feet. This well, located in section 27-10-34, picked up the top of the Franciscan basement at 4,890 feet and the hole was finished with 461 feet of 6⅝-inch liner including 442 feet of perforated landed on bottom.

No. 3 Brown, a joint undertaking of Hancock Oil Co. and R. R. Bush Oil Co., was completed flowing 1,250 bbls. of clean 16.5-gravity oil per day from 4,272 feet. The hole was finished with 1,015 feet of 6⅝-inch liner including 1,006 feet of perforated landed at 4,262 feet and 4,205 feet of 3-inch tubing with packer. The Hancock and Bush interests are rigging up rotary drilling equipment in No. 2 Bradley in section 26-10-34 and have staked location for No. 4 Hopkins in section 30-10-33. Petroleum Securities Co. No. 1 Carey was completed pumping 740 bbls. of 14.3-gravity oil daily from 5,249 feet. It was originally carried down to 5,320 feet but plugged back due to the extremely heavy gravity of the oil produced. The lower 71 feet yielded a 12.1-gravity oil but by plugging off this interval the gravity of the oil was raised a little better than 2 degrees. No. 1 Weber of Petroleum Equities, Inc., was completed, pumping 546 bbls. of clean 15.6-gravity oil daily from 4,318 feet. This producer, in section 27-10-34, found the top of the Monterey at 4,303 feet. Union Oil Co. recompleted No. 1-19 Enos in the east end of the field in section 19-10-33, but the well has not yet cleaned up. The company pulled the original liner from 2,656 feet, sidetracked the balance to 2,754 feet and then finished the hole with 1,006 feet of 6⅝-inch liner including 162 feet of perforated landed at 2,754 feet and cemented through perforations at 2,585 feet.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	March 25		March 18			
	Total this week	Daily average	Total last week	Daily average	This week to date	Same time last year
Intercoastal-domestic:						
Crude oil	.....	.....	70,180	10,026	70,180	.....
Diesel and gas oil	.....	.....	.....	.....	.....	176,726
Gasoline	.....	.....	.....	.....	461,496	286,012
Kerosene	.....	.....	.....	.....	132,575	.....
Foreign exports:						
Crude oil	350,581	50,083	385,021	55,003	5,217,399	2,868,004
Fuel oil	154,243	22,035	290,159	41,451	1,902,960	3,042,953
Diesel and gas oil	163,150	23,307	46,397	6,628	1,147,972	1,605,770
Gasoline	65,839	9,406	88,241	12,606	1,180,159	1,705,482
Kerosene	28,909	4,130	42,610	6,087	239,972	633,806
Other unfinished oil	.....	.....	.....	.....	.....	179,265
Coastwise-domestic:						
Crude oil	452,546	64,649	130,909	18,701	2,645,516	1,434,215
Fuel oil	103,584	14,798	129,614	18,516	2,853,063	3,373,600
Diesel and gas oil	34,555	4,936	48,301	6,900	388,179	528,019
Gasoline	262,768	37,538	296,206	42,315	3,324,161	2,713,852
Kerosene	3,584	512	18,764	2,681	65,104	31,998

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	178,662	152,932
Gasoline	9,499	1,357	.....	.....	9,499	25,778
Lubricants	3,009	430	.....	.....	76,458	.....
Foreign exports:						
Crude oil	305,307	43,615	.....	.....	1,065,484	829,591
Fuel oil	108,987	15,570	.....	.....	365,201	356,977
Diesel and gas oil	143,387	20,484	.....	.....	325,360	810,173
Gasoline	15,863	2,266	97,263	13,895	991,543	1,328,396
Kerosene	.....	.....	.....	.....	110,450	234,157
Lubricants	18,857	2,694	.....	.....	101,489	.....
Coastwise-domestic:						
Fuel oil	92,637	13,232	123,787	17,684	1,524,883	1,557,272
Diesel and gas oil	21,455	3,065	31,216	4,459	404,077	122,031
Gasoline	72,860	10,409	135,606	19,372	1,520,390	1,167,983
Kerosene	.....	.....	16,948	2,421	192,031	21,509

Torrance

Development work in the Torrance field in the Los Angeles Basin, during the past several months has not resulted in the completion of any large flowing wells and if the initial daily production of completions is any criterion deep zone development in this area will only be of minor consequence from a production standpoint. Drilling operations have shown a consistent increase from week to week but a tendency has been noted during the past fortnight to restrict development work to one or two wells at a time. In addition to the relatively small production registered by wells in the deep zone a pronounced water problem remains to be solved before clean sustained commercial production can be secured. Most of the wells completed in the deeper horizon at Torrance have shown an abnormally high decline and usually settle at approximately 100 bbls. per day. Many of the wells now headed down to the lower zone were originally completed in the Del Amo zone which produced a crude oil averaging around 16 degrees. Deepening operations result in a rejuvenation of production of from 10 to 200 bbls. per day and in place of the base price for crude oil production is stepped up into the higher brackets as the lower zone yields a crude oil ranging from 24 to 27 degrees.

During the past week two new wells and one recompletion showed an aggregate initial production of 533 bbls. The latter was W. E. McCaslin No. 2 Hutchins, which was returned to production flowing 240 bbls. of exceptionally clean 26.9-gravity oil daily after the hole had been redrilled and deepened to 5,014 feet and finished with 1,565 feet of 6⅝-inch blank liner which was subsequently gun perforated.

In the Torrance field Doyle Petroleum Co. No. 2 Neill and Lakeside Oil Co. No. 1 Torrance were completed. The former pumped 120 bbls. of clean 26.9-gravity oil daily from 4,997 feet. Production of this well showed slugs of water and mud at frequent intervals. Lakeside Oil Co. No. 1 Torrance was completed flowing 173 bbls. of clean 26.8-gravity oil daily from 4,998 feet.

El Segundo

The El Segundo field in Los Angeles Basin is rapidly passing out of the production picture although a few additional wells will be completed from time to time. The productive limits have been well defined. It has only produced 4,852,195 bbls. of crude oil down to March 1, 1938. Two new wells were completed in the past week and with the exception of Ohio Oil Co. No. 12 Gough this winds up the present drilling program. Sovereign Oil Co. got a pleasant surprise by completing No. 1 El Segundo flowing 1,080 bbls. of 25.1-gravity oil cutting 5 per cent daily from 7,354 feet. This is the most westerly producer in the field and production is expected to hold up for another several weeks as the bottom hole pressure is 1,800 pounds. The Termo Co. No. 2 El Segundo has been completed flowing 240 bbls. of relatively clean 25.8-gravity oil per day on a compressor from 7,400 feet. The company is making preparations to place this new well on the beam as previous work has indicated that better production is secured when wells are pumped.

Coastal Area

Southcrude Oil Co. has taken a sublease from Bolsa Chica Oil Co. on its tideland permit No. 190 at Coal Oil Point, a few miles east of the Elwood field of Santa Barbara County and plans call for the drilling of a new well that will be whipstocked out into the open ocean. Bolsa Chica Oil Co. constructed a pier at this point several years ago and it is the intention to start a new well out at the seaward end of this drilling wharf.

San Joaquin Basin

In the Midway-Sunset field of Kern County, Chanslor Canfield Midway Oil Co. has completed No. 4 Tumbador in section 24-31-22 pumping 25 bbls. of 17.6-gravity oil cutting 12 per cent, from 2,430 feet. The company may be obliged to reenter the hole and undertake correctional work. Completion last week of a small well by Tide Water Associated Oil Co. appears to have limited the productive area in the northwestern end of the North Belridge field. Richfield Oil Corp. should get its first commercial production in this field within another few days as its No. 1-A Belridge in section 22-27-20 is rotating ahead in the pay at 8,520 feet.

Los Angeles Basin

The western end of the Rosecrans field has taken on a very much better aspect since Universal Consolidated Oil Co. cored top of the deep O'Dea zone in No. 2 Trust at 7,300 feet and found this horizon still present in the bottom of the hole at 7,601 feet when drilling operations were concluded so that a string of 8⅝-inch casing might be landed as a water string. In the Long Beach field John Abrams and associates have completed their No. 1 pumping 150 bbls. of relatively clean 23.6-gravity oil daily from 4,644 feet. Some difficulty is being experienced with sand trouble but work has already been started to remedy the situation. Oceanic Oil Co. recompleted its No. 5 in this field pumping 84 bbls. of 24.5-gravity oil per day after redrilling and deepening the hole to 4,432 feet. In the Huntington Beach field Termo Co. recompleted No. 1 McIntyre pumping 341 bbls. of clean 23.1-gravity oil daily from 5,305 feet.

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO

Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Santa Paula*	Orcutt*
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	...	...	...	$.80	$.76	$.76	$.77	$.78	...	...	$.70	$.70	$.70	...	...	$.70	..
15-15.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	..
16-16.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	$.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	...	...	...	.82	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	...	...	...	.85	.76	.78	.77	.78	...	$.70	.74	.74	.71	$.70	...	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	...	...	...	.88	.78	.82	.77	.80	...	.70	.78	.78	.72	.70	...	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	...	...	...	.91	.80	.85	.77	.84	$.78	.73	.82	.82	.74	.70	...	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	...	...	...	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	...	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	...	.96	.88	.93	.82	.92	.78	.80	.92	.90	.82	.76	...	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	...	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	...	.87	.84
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	...	1.02	.95	...	.89	.99	.86	.88	1.01	.98	.90	.83	...	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	...	1.05	.98	...	.92	1.03	.90	.91	1.06	1.02	...	...	...	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	...	1.10	1.03	.88	...	...	1.02	...	.96	1.06	.95	.95	1.10	1.06	...	...	...	.95	..
28-28.9	1.14	1.10	.90	1.14	1.15	...	1.14	1.07	.90	...	...	1.06	...	.99	1.10	.99	.99	1.15	1.10	...	...	...	.97	..
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	...	...	1.09	...	1.03	1.14	1.03	1.02	1.20	1.14	...	...	...	.99	..
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	...	...	...	1.07	1.17	1.08	1.06	1.25	1.18	...	...	...	1.01	..
31-31.9	...	...	...	...	1.24	Pipe	1.24	1.22	.97	Ship	...	...	...	1.11	1.21	1.12	1.09	1.29	...	...	...	...	...	...
32-32.9	...	...	...	...	1.27	Line	1.27	1.27	1.00	...	...	...	...	1.14	1.25	1.16	1.13	1.34	...	...	...	...	...	...
33-33.9	...	...	...	...	...	...	...	1.32	...	$1.28	...	...	...	1.18	1.28	1.20	1.17	1.38	...	...	...	$1.19	...	...
34-34.9	...	...	...	...	...	...	...	1.37	...	1.32	...	...	...	1.22	1.32	1.25	1.20	...	...	...	...	1.23	...	...
35-35.9	...	...	...	...	...	...	...	1.42	...	1.35	...	...	...	1.25	...	1.29	...	...	...	...	...	1.27	...	...
36-36.9	...	...	...	...	...	...	...	1.46	...	1.39	...	...	...	1.29	...	1.33	...	...	...	...	...	1.31	...	...
37-37.9	...	...	...	...	...	...	...	1.51	...	1.43	...	...	...	1.32	...	1.37	...	...	...	...	...	1.35	...	...
38-38.9	...	...	...	...	...	...	...	1.56	...	...	...	...	...	1.36	...	1.42	...	...	...	...	...	1.39	...	...
39-39.9	...	...	...	...	...	...	...	1.61	...	...	...	...	...	1.40	...	...	...	...	...	...	...	1.43	...	...
40-40.9	...	...	...	...	...	...	...	1.66	...	...	...	...	...	1.43	...	...	...	...	...	...	...	...	...	...

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 18.9 degrees, 80 cents; 19-19.9, 82 cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents; 24-24.9, 99 cents; 25-25.9, $1.03; 26-26.9, $1.06; 27-27.9, $1.10; 28-28.9, $1.14; 29-29.9, $1.17; 30-30.9, $1.21. Wilmington, 14 to 16.9, 75 cents; 17-17.9, 77 cents; 18-18.9, 79 cents; from 19 degrees upward, prices same as Signal Hill.

Oklahoma Operations

By
DAL DALRYMPLE

Start Cimarron County Test; Payne Wildcat Finds Oil, Gas

An Ordovician test for the Panhandle of Oklahoma was announced the past week when Barnsdall Oil Co. started moving in material at No. 1 School Land, C NW SE section 35-5n-5ecm, north of Boise City in Cimarron County, farthest west county in the state. M. M. Valerius and O. E. Stoner, both of Tulsa, worked the surface geology and assembled the block.

The wildcat location is 1½ miles southeast of Ramsey Brothers No. 1 well, section 27-5n-5ecm, that was drilled in 1927 and swabbed 150 bbls. of 39-gravity oil daily from Pennsylvanian sand at 4,095-4,125 feet before rig was burned and hole junked. A second well drilled by Ramsey Brothers in section 4-5n-5ecm had a good showing of oil, with water, at about the same depth.

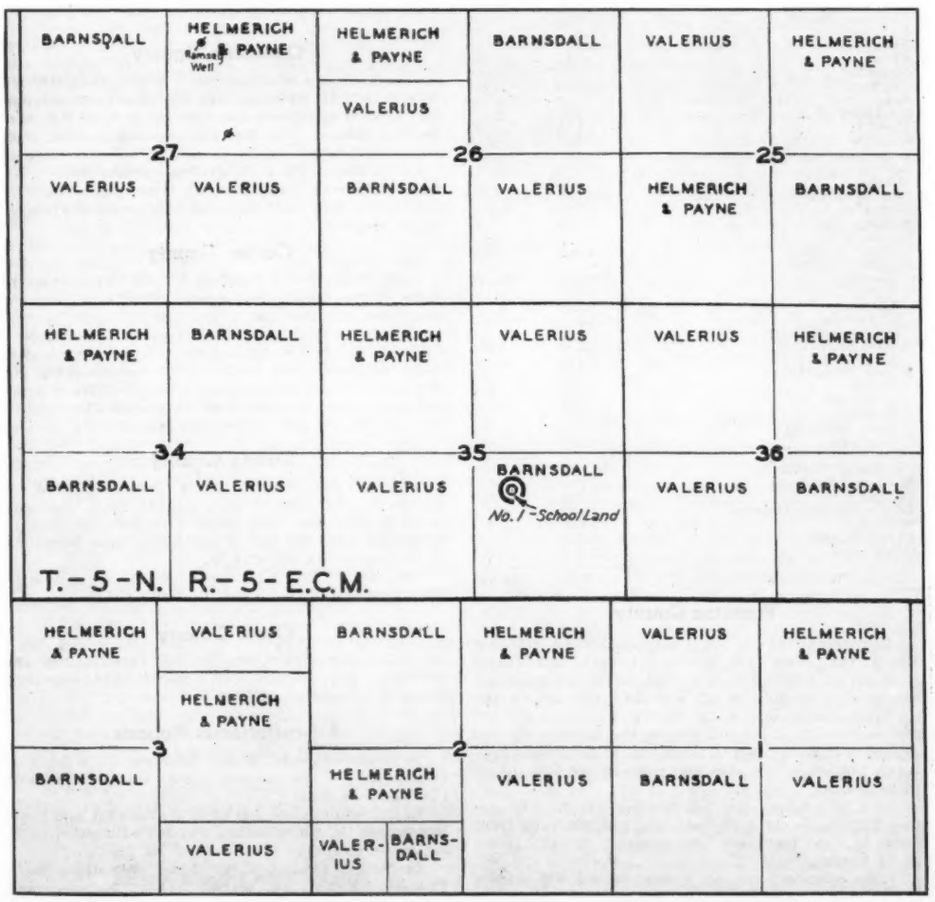
The Oklahoma Panhandle area attracted interest of oil men recently, due to gas having been found in the Indian Territory Illuminating Oil Co. No. 1 Davis, T.&N.O. Survey, Sherman County, Texas. This well is in the northwest part of the Texas Panhandle. It is thought the Cimarron County wildcat is on a regional subsurface high from the northwest extension of the Texas Panhandle field through the I.T.I.O. gasser and the Ramsey well.

Payne County, recently in the oil news spotlight because of discovery of the Ramsey pool, is due for another wildcat test within the next few weeks. Tentative location is on a seismograph high in section 22-19-1e, about 6 miles northwest of the Ramsey pool and an equal distance west of Stillwater. It is on a unit block, designated as McQuain Community, of 520 acres owned in varying proportions by Sinclair Prairie Oil Co., Sun Oil Co., William J. Sherry, Amerada Petroleum Corp., Stanolind Oil & Gas Co., Denver Producing & Refining Co. and Burke-Greis Oil Corp. It is to be a Wilcox sand test.

A wildcat north of Cushing in eastern Payne County was showing as a pool opener but completion was delayed by a fishing job. It is R. L. Kemp and others No. 1 Rafferty, SE SE NE section 6-18-5. Wilcox sand was found at 3,665-66 feet, gas blew tools up the hole, broke the line and the fishing job followed. It was spraying an estimated 35 bbls. of oil daily with considerable gas.

Carter Oil Co. announced that its purchases of crude oil in Oklahoma will be reduced 20 per cent, effective April 10.

Oklahoma daily allowable crude oil production in April was set at 475,000 bbls. by the Corporation Commission. This is the same as the March allowable, but the allowables for some fields were readjusted to avoid overproduction. The Wilcox zone at Oklahoma City, the state's only Class A pool, had no change in its allowable of 85,699 bbls. daily, but minimum allowable for the field was raised from 225 bbls. daily to 250 bbls. and the percentage potential was increased from 8.5 to 10. Total allowable for all Class B pools was cut from 123,510 bbls. to 116,827 bbls., with Class C pools taking a cut from 64,294 bbls. to 58,118 bbls. Allowables for Class D pools were raised from 11,318 bbls. to 11,860 bbls., and unclassified prorated areas from 38,675 bbls. to 46,339 bbls. The Traugh deep area and Dora pool of Seminole County were removed from the stripper class and added to unclassified prorated areas. Allocation for stripper areas was 156,157 bbls., compared with 151,504 bbls. in March.



Work has started at an Ordovician test in section 35-5n-5ecm, in Cimarron County, Oklahoma Panhandle

Wildcat Operations

Stanolind Oil & Gas Co., Amerada Petroleum Corp. and others No. 1 Strader, NW NW NE section 8-13-3e, wildcat southwest of Chandler in Lincoln County, was dry and abandoned at 5,277 feet, total depth, after Schlumberger test had failed to reveal production possibilities. It had Viola lime at 5,092 feet, Simpson Dense 5,124 feet, Dolomite 5,146 feet, Wilcox sand 5,173 feet, second Dolomite 5,222 feet, second Wilcox sand 5,245 feet.

Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 Martin, NW NE NE section 6-9-9, Hughes County wildcat, topped Cromwell sand at 3,474 feet, and was dry and abandoned at 3,486 feet, total depth, when drill stem test revealed 130 feet of salt water and mud with only a scum of oil.

Patton and others No. 1 McCrummens, SW SW NE section 16-1s-6, Johnston County wildcat, was reported abandoned at 1,382 feet, total depth. A sand showing oil was found at 885-894 feet.

The following wildcat tests were reported for the first time: Darby Petroleum Corp. No. 1-A Lillie, NW NW SW section 1-22-3, Pawnee County, between the Watchorn and Masham pools, digging cellar and pits; Wah-Sha-She No. 1 Osage, NE NE SW section 4-28-9, Osage County, location; Texas Co. No. 1 Logan, C W half NW NW section 12-17-1e, south of Ramsey pool in Payne County, near the Logan County line, digging cellar and pits; Shell Petroleum Corp. and others No. 1 Boley, SE SE SW section 8-11-6, northwest of the Keokuk area in northeastern Pottawatomie County, a rig; Anderson-Prichard Oil Corp. No. 1 Johnson, NW NE SE section 10-7-20w, Kiowa County, location; Pure Oil Co. No. 1 Lack and others, SE SW NW section 3-6-5, Seminole County, rig and cellar; L. P. Sandback and others No. 1 Porter, NE SE NW section 28-4-7, Pontotoc County, machine; B. F. Lundy and others No. 1 Oxford, NE NE SW, section 26-1s-4w, location.

Oklahoma County

Four producers were completed in the north end of the Oklahoma City field, Oklahoma County. Olson Oil Co. and Heenan & Coe No. 1 Thornton, NE SW SW section 15-12-3w, had Dolomite pay at 6,402 feet, total depth 6,512 feet, was acidized and flowed 1,662 bbls. of oil through casing in 24 hours. Production declined to 1,079 bbls. of oil in 24 hours, cutting 3 per cent salt water, and it was reacidized. It then flowed 1,239 bbls. of oil net, through tubing, cutting 5 per cent.

Stahl Petroleum Corp. No. 1 Crawford, NW NE SW section 15-12-3w, topped Dolomite at 6,344 feet and was bottomed at 6,454 feet. After acid treatment, it flowed 1,023 bbls. of oil net through tubing in 24 hours, cutting less than 1 per cent water.

Clark & Co. No. 1 Ownbey, NW SE SW section 15-12-3w, was shot and acidized and flowed 840 bbls. of oil through tubing in 24 hours, with 8,000,000 feet of gas. Best upper Simpson pay was topped at 6,382 feet, total depth 6,535 feet.

Fortson & Polk No. 1 Irvington Addition, NE SE SW section 15-12-3w, found best Simpson pay at 6,358 feet, Wilcox sand 6,415 feet and was bottomed at 6,450 feet. It was acidized and completed as a 35-bbl. pumper.

Two new tests were started at Oklahoma City. Oils, Inc., No. 1-A Huddleston, NW SW NE section 19-11-2w, had spudded. Gulf Production Corp. of Oklahoma No. 7 Schuster, NW SE SW SW section 15-12-3w, had dug cellar.

Pottawatomie County

Magnolia Petroleum Co. No. 1 Jordan, SE SE SW section 12-7-4, St. Louis field, Pottawatomie County, had Calvin pay at 3,072-85 feet, total depth 3,115 feet, plugged back to 3,085 feet and flowed 170 bbls. of oil in 24 hours through casing.

Hales-Meyers No. 1-A Owens, NE SE SE section 21-7-4, was dry and abandoned at 3,515 feet, total depth.

Ross Oil Co. No. 1-A Caudle, NW SW SW section 13-

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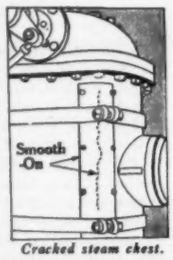

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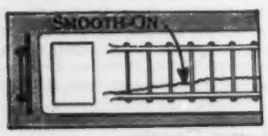

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7-4, was shot and swabbed and flowed 110 bbls. of oil in 24 hours from Calvin pay at 3,114-31 feet, total depth.

Woodson Oil Co. No. 1-A Singletary, SE SE SW section 14-7-4, was dry and abandoned at 3,235 feet, total depth.

Alma Oil Co. No. 1 Smith, SE SE NE section 32-7-5, topped Dolomite at 4,005 feet, total depth 4,059 feet, and pumped 930 bbls. of oil in 24 hours, cutting 10 per cent water.

Southwest Petroleum Co. No. 3 Gunter, NE NE SW section 32-11-4, Shawnee pool, found Earlsboro sand pay at 4,358-4,460 feet, total depth, swabbed 60 bbls. of oil in 24 hours and was estimated good for 40 bbls. daily.

Magnolia Petroleum Co. No. 3 Billington, NE NE NW section 22-7-4, an old well, was plugged back from 3,800 feet to 3,454 feet, was shot and flowed 175 bbls. of oil in 24 hours.

Tilico Oil Co. No. 3 Brister, SW NW NE section 28-7-4, an old well, was plugged back from 4,135 feet to 3,954 feet, ripped casing, shot and flowed 27 bbls. of oil in 24 hours.

Magnolia Petroleum Co. No. 5 Robbins, SW SW SE section 15-7-4, an old well, was plugged back from 3,829 feet to 3,519 feet, shot and pumped 87 bbls. of oil in 24 hours.

Same company's No. 2 Billington, NW NW NE section 22-7-4, an old well, was plugged back from 3,749 feet to 3,454 feet, perforated casing and pumped 115 bbls. of oil in 24 hours.

New operations in Pottawatomie County: Magnolia Petroleum Co. No. 2 Jordin, SW SW SE section 12-7-4, location; Gulf Oil Corp. No. 4 Barton, NE NE NW section 13-7-4, cellar and pits; J. F. Smith and others No. 1-A Bettis, SE cor. section 17-7-4, cellar; A. C. Fletcher No. 1-A Davidson, NW NE NE section 22-7-4, pits; same operator's No. 2 Harber & Riddle, SW NW SW section 31-7-5, rig.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending April 2, and for the preceding week, was as follows:

	Barrels	
	April 2	March 26
Allen	5,725	5,525
Billings	7,675	7,800
Burbank	7,550	7,525
South Burbank	11,100	11,250
Balance Osage	18,750	18,750
Blackwell district	4,750	5,450
Bristow-Slick	6,900	6,875
Chandler	2,350	2,375
Crescent	7,025	7,100
Cromwell	3,250	3,275
Cushing-Shamrock	10,750	10,500
Duncan district	3,800	3,750
Edmond	6,800	7,075
Fish	3,975	4,025
Fitts	59,725	60,750
Jesse	3,475	3,850
Graham	5,250	5,200
Gray	1,000	1,050
Healdton	9,350	9,375
Hewitt	4,150	4,125
Keokuk	6,250	6,650
Konawa	1,375	1,650
Lucien	12,575	13,025
Moore	6,925	7,300
Oklahoma City	102,700	109,450
Olympic	6,525	6,875
Ramsey	775	825
Sasakwa	1,725	1,800
Sholem-Alechem	3,000	2,975
Seminole district:		
Bowlegs	10,025	10,125
Carr City	4,050	4,125
Dora	5,500	5,725
Earlsboro	5,250	5,325
South Earlsboro	525	600
East Earlsboro	5,450	5,650
Little River	8,475	8,600
East Little River	925	950
Maud	850	825
Mission	1,700	1,725
Seminole	8,125	8,250
East Seminole	1,675	1,800
Searight	3,525	3,600
Total Seminole	56,075	57,300
St. Louis-Pearson	18,775	19,075
Tatums	3,750	3,850
Tonawa-Garber-Thomas	4,400	4,250
Wewoka	2,450	2,425
Yale-Jennings	3,775	3,750
Other pools	77,450	78,000
Total Oklahoma	491,875	504,825

Pontotoc County

Continental Oil Co. No. 3 Monroe, NE SW NW section 12-1n-7, Jesse pool, Pontotoc County, had McLish sand pay at 4,687-4,710 feet, total depth, and made potential of 1,558 bbls. of oil, with 1,045,000 feet of gas.

Texas Pacific Coal & Oil Co. No. 4 Hatcher, SE NE NW section 30-5-5, an old well in the Beebe pool, was deepened from 616 feet to Viola lime at 2,343 feet, total depth 2,502 feet, was shot and pumped 164 bbls. of oil in 24 hours.

H. L. Blackstock No. 2-A Harden, NE SE NW section 30-2n-7, an old Fitts well, was plugged back from 3,750 to 2,992 feet, shot and swabbed 60 bbls. of oil in 24 hours.

Same operator's No. 4-B Moody, SE SW SW section 23-2n-7, was location for a new Fitts test.

Seminole County

J. F. Smith and others No. 1 Harryman B, NW SE SW section 33-7-6, Dora pool, Seminole County, found Boggy sand pay at 2,819-90 feet, total depth, was shot and flowed 545 bbls. of oil through casing in 24 hours.

Texas Co. No. 1 Lewis, SW SE NW section 13-5-7, an old Allen pool well, was plugged back from 4,286 feet to 4,115 feet, perforated casing, acidized and pumped 10 bbls. of oil daily.

Gulf Oil Corp. No. 3 Denmark, NE SW SE section 11-7-6, an old well, was shot at 4,224-30 feet, pumped 20 bbls. of oil in 18 hours and pumped off.

New work in Seminole County: Magnolia Petroleum Co. No. 2 Fleet & Osborn, SW SE NE section 26-5-7, location; J. F. Smith and others No. 1 England, SE SE NW section 15-7-6, drilling below 700 feet; same operators' No. 3 Harryman B, SE SE SW section 33-7-6, was a derrick.

Osage County

Lewis Production Co. No. 7 Osage, NE NW SW section 27-24-7, Naval Reserve area, Osage County, had Bartlesville sand at 2,595 feet, total depth 2,679 feet, was shot and flowed 130 bbls. of oil in 24 hours.

Indian Territory Illuminating Oil Co. No. 3 Osage, SW NE NE section 27-25-11, an old well, was deepened from 1,840 feet to 1,910 feet and recompleted for 2,700,000 feet of gas.

Wolverine Oil Corp. and others No. 12 Osage, SE NW SE section 31-24-12, an old well, was deepened from 1,727 feet to 1,750 feet and recompleted for 10 bbls. of oil and 30 bbls. of water.

Lewis Production Co. and Texas Co. No. 1 Osage, NW NW SE section 33-24-7, was rigging up. Wolverine Oil Corp. and others No. 14 Osage, CSL SE NW section 31-24-12, an old well, was being rigged up to deepen.

Okmulgee County

Flecks Drilling Co. No. 1-A Adams, NW NE SW section 12-14-14, Okmulgee County, had Booch sand pay at 1,045-60 feet, total depth 1,066 feet, and pumped 5 bbls. of oil daily.

W. B. Pine No. 10 Bassett, C SE SW section 19-14-14, pumped 5 bbls. of oil daily after a shot from Booch sand pay at 1,336-53 feet, total depth.

Prince & Brown No. 20 Warner, SE NE NE section 21-14-14, found Booch pay at 1,103-17 feet, total depth, was shot and pumped 5 bbls. of oil daily.

Pure Oil Co. No. 12 Perryman, CWL NE SW section 14-13-12, an old well, was deepened from 1,757 feet to 2,166 feet and was dry and abandoned.

Texas Co. No. 12 Lewis, SW NE SW section 20-15-14, an old well, was preparing to deepen. E. W. L. Edwards No. 7 Tabor, NE NW NE section 33-15-14, was a location.

Okfuskee County

W. B. Wells and others No. 2 Fields, CWL SW NW section 13-10-11, Weleetka area, Okfuskee County, topped Salt sand at 1,620 feet, had first oil at 1,630 feet, total depth 1,660 feet, was shot and pumped 15 bbls. of 42-gravity oil daily.

A. S. Barry No. 2 Huldy Deer Sands, SE NE NW section 28-10-11, had Cromwell sand pay at 2,553-73 feet, total depth 2,583 feet, and produced 3,000,000 feet of gas daily.

Carter County

Carl Carter No. 1 McClish, SE SW NE section 19-2s-3w, Carter County, had a hole full of water and was abandoned at 1,340 feet.

New work in Carter County: Carlock & Dexter No. 1 Tillis, NW SW SW SE section 4-4s-3w, an old well deepened from 1,083 feet to 1,111 feet, cleaning out; Magnolia Petroleum Co. No. 16 Dawson, SW NW NE section 4-4s-3w, location; Sheli Petroleum Corp. No. 19 Horton, SW SW NE section 6-4s-3w, pits.

Caddo County

Magnolia Petroleum Co. No. 8 Hedlund, NE NW NE section 11-5-9w, Cement pool, Caddo County, had sand series at 5,355 feet, total depth 5,404 feet, and blew in, producing 8,260,000 feet of gas from Deese formation. It was completed and shut in.

Ohio Oil Co. No. 5 Hedlund, NW SE NE section 11-5-9w, was location for a new Cement test.

Greer County

J. I. Midlin and others No. 1-E Broudie, NW cor. section 5-6-20w, northeastern Greer County, was abandoned at total depth of 90 feet.

Miscellaneous Reports

In Hughes County, McGee Brothers No. 6 Bank of Commerce, NW cor. section 12-9-10, was a machine in the Wetumka area.

In Garfield County, Big Chief Drilling Co. and Lease Investment Co. No. 1 Zollars, SW SW SE section 34-24-3w, was a location.

In Lincoln County, E. W. Jones and others No. 1 Thomas, NE NW NW section 2-14-2e, Wellston pool, was a rig.

In Garvin County, Skelly Oil Co. No. 1 Burr, SE NE SW section 29-1n-3w, Tussy pool, was a location. Same

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Central West

By STAFF CORRESPONDENT

Benoist Sand Yields Good Wells in Two Illinois Pools

MATTOON, Ill., Apr. 4.—Fifteen oil wells with a combined initial production of 2,783 bbls. were completed in Clinton, Marion, Richland, Fayette, and Jefferson counties in the past week, and two dry holes were abandoned in Randolph and Coles counties. Most of the completed wells were Benoist sand producers in Clinton County. The best of these was good for 449 bbls. initially from this shallow sand. A Benoist sand well that started at 404 bbls. was completed in the new Dix pool in Jefferson County. It is the best of the wells thus far completed in that pool.

As usual the new work started exceeded the completions. There were 23 new locations, rigs up or wells drilling in the basin area. Much of the new work was in the Centralia pool which is in Townships 1n-1w in Clinton County and 1n-2w in Marion County.

Completed Wells

In Clinton County, Bailey and others No. 1 M. Brown, SE cor. NW SE NE section 13-1n-1w, Centralia townsite, had Benoist sand at 1,356-81 feet, total depth, and made an initial production of 80 bbls. It will be shot later. Clint Crosby and others No. 1 Skipper and Koeling, SE NW SE NE section 13-1n-1w, was also an 80-bbl. initial producer from Benoist sand at 1,353-81 feet. It will be shot. H. & H. Drilling Co. No. 1 Breneman, NW cor. SE SE NE section 13-1n-1w, was shot with 20 quarts at 1,364-72 feet and pumped 150 bbls. John Pugh Drilling Co. No. 1 Pfeiffer, NE cor. NW NE SE section 13-1n-1w, shot with 100 quarts at 1,356-82 feet, pumped 170 bbls. the first 24 hours; No. 1 Paff, NW cor. NE NE SE section 13-1n-1w, was shot with 20 quarts at 1,360-81 feet, and pumped 449 bbls. of oil the first day and 567 bbls. the second day. Rourke & Moore No. 1 Sangerfeld and Westman, SW cor. SE NE section 13-1n-1w, pumped 120 bbls. the first day from sand at 1,361-89 feet, which had not been shot. H. H. Weinert, Inc., No. 1 fee, NW cor. SW NE NE section 13-1n-1w, pumped 160 bbls. in 24 hours from sand at 1,356-76 feet, shot with 10 quarts. Santa Fe Oil Co. No. 2 Maddox, SW cor. C NW SW section 4-1n-3w, found Cypress sand at 968-96 feet and pumped 88 bbls. the first day. Adams Oil & Gas Co. No. 2 Peter Heirs, 1,485 feet from E and 200 from N lines of NE quarter section 13-1n-1w, pumped 150 bbls. initially after a 20-quart shot at 1,372-80 feet.

In Coles County, Gregory & Mechling and others abandoned No. 1 Foltz, NW cor. SW NE section 31-14n-14w, (measuring from Indiana principal meridian). It was drilled to 1,203 feet, with no showings reported.

In Richland County, Gordon and others No. 1 Lathrop, CEL NE SW SE section 14-3n-9e, flowed 202 bbls. in 24 hours, 40 per cent salt water and mud from pay at 2,940-43 feet, total depth 3,059 feet. Ohio Oil Co. No. 10 Arbuthnot, C E half SE NW section 8-3n-9e, flowed 337 bbls. in 24 hours following a 3,000-gallon acid treatment at 2,951-63 feet, total depth 2,992 feet. Pure Oil Co. No. 10 Palmer-Taylor, C W half NW SE section 5-3n-9e, flowed 338 bbls. naturally from pay at 2,950-67½ feet.

In Marion County, Frank Frederick No. 1 Porter Syndicate, SE cor. NE NE SW section 28-4n-1e, was shot with 40 quarts in Benoist sand at 1,438-55 feet, and pumped 20 bbls. the first day thereafter.

In Fayette County John Farrelly completed No. 1 Lilly, SE cor SW SE section 16-8n-3e in Cypress sand at 1,447-1,523 feet and has 35-bbl. well. It had been drilled to 1,524 feet.

In the Dix pool in Jefferson County, opened by Carter Oil Co., that company's No. 1 Copple, C E half SE SE section 9-1s-2e, pumped 404 bbls. the first 21 hours, following a 15-quart shot in Benoist sand at 1,939-56 feet.

In Randolph County, Pioneer Oil & Gas Co. No. 1 Johnie, SE NW NW section 26-6s-6w was a hole full of water from sand at 707-716 feet, and was abandoned.

Many Near Completions

Many wells were on top of or in the Benoist sand in the Centralia field at the close of the report but were not yet completed. Shell Petroleum Corp. No. 2 Buehler, section 1-1n-1w, was in sand at 1,333-57 feet and swabbed 50 bbls. of oil in 24 hours. It will be given a pumping test. Shell Petroleum Corp. and Gulf Oil Corp. No. 1 Criley-Buehler, section 1-1n-1w was in pay at 1,336-60 feet and had 7-inch casing set at 1,335 feet. Shell Petroleum Corp. No. 2 R. Koelmel, section 1-1n-1w, with sand at 1,335-61 feet, was shot with 15 quarts and after recovering a lost bailer preparations were being made to put it on the pump. Shell Petroleum Corp. No. 3 Koelmel, section 1-1n-1w had sand at 1,308-43 feet and swabbed 32 bbls. of oil in 24 hours. The crew was testing the cement job. Shell Petroleum Corp. No. 2 Mary Pitchford, section 1-1n-1w, had sand at 1,314-29 feet, set 4½-inch casing at 1,306 feet, and was waiting for a spudder. Same company No. 3 Pitchford, was drilling below 1,165 feet. Tate & Longoria No. 1 Skipper, section 6-1n-1w, (Marion County) was shut down for orders after finding Cypress sand at 1,405-45 feet, with no oil showing. Adams Oil and Gas Co. No. 2 E. B. Marshall section 12-1n-1w, (Clinton County) had sand at 1,371-92 feet and set 5½-inch pipe at 1,365 feet. Carter Oil Co. was drilling sand at 1,065 feet in No. 2 Buehler, section 12-1n-1w. Ma Conry No. 2 Barth, SE cor. SW SE SW section 12-1n-1w, was drilling at 1,350 feet in lime. Lilly, trustee, No. 1 Meyers, section 12-1n-1w, was in Benoist sand at 1,361-71 feet with casing set at 1,360 feet. Lilly and others No. 1 Seigler, section 12-1n-1w was shot with 35 quarts at 1,378-93 feet. It pumped 100 bbls. of oil and 250 bbls. of salt water the first 24 hours; later pumping 72 bbls. of oil and 25 bbls. of water; still later there was no water; it had not been given a completion gauge. Shell Petroleum Corp. was on top of sand at 1,353 feet in No. 3 Buehler, section 12-1n-1w, with 4½-inch pipe set at 1,349 feet. No. 4 Buehler NE section 12-1n-1w, was drilling at 1,106 feet. Thompson & Self No. 1 Hanseman, section 12-1n-1w had Stein sand at 1,218-28 feet, with a small oil showing, and Benoist at 1,362-82 feet, Adams Oil & Gas Co. No. 6 Hefter heirs, SW cor. NW NE section 13-1n-1w was in Benoist sand at 1,367-90 feet, with 7-inch casing set at 1,365 feet. Adams Oil & Gas Co. 1 Peter heirs-B, section 13-1n-1w was in Benoist sand at 1,349-74 feet, with 7-inch pipe set at 1,349 feet. Penn Illinois Oil Co. No. 1 Lafe Noller, section 28-2n-1w, was in Benoist sand at 1,441-44 feet and set 6-inch at 1,440 feet. After plug was drilled salt water was bailed. Drilling was continued and the hole had reached a depth of 1,630 feet. This is a wildcat.

In Washington County Bitterman and others No. 1 Jesse, C SE NE section 16-3s-2w had Benoist sand top at 1,362 feet, a stain of oil at 1,364-67 feet and a hole full of water at 1,380 feet, and was drilling at 1,405 feet.

New Work Reported

New work reported in the Centralia field, Clinton County, included Shell Petroleum Corp. No. 1 Geary-Criley, 995 feet from N and 330 from E lines of NE quarter section 2-1n-1w had rotary moved in. Adams Oil & Gas Co. was rigging up rotary for No. 1 Baker, 250 feet from S and 1,390 from E lines of SE quarter section 12-1n-1w. Louis Lilly and others had rig up for No. 2 Penn, 540 feet from S and 475 from E lines of SE quarter section 12-1n-1w. B. C. Morrison No. 1 Kesterson 40 feet from S and 470 from E lines of SE quarter section 12-1n-1w, was drilling at 750 feet. Muhlbach & Pray had rig up for No. 1 Penn, 60 feet from S and 645 from E lines of SE quarter section 12-1n-1w. Kesl & Fox spudded No. 1 P. H. Noe, 990 feet from E and 700 feet from S lines of the NW quarter of section 13-1n-1w. Same operators' No. 3 Ben Storer, 135 feet from N and 450 from E lines of NE quarter section 13-1n-1w, was drilling below 1,100 feet. John Pugh Drilling Co. had rig up for No. 1 Henry Knipping near NE cor. SW NE SE section 13-1n-1w. John Pugh Drilling Co. No. 1 Wheeler, near C SE SE NE section 13-1-1w was drilling at 1,250 feet. A. B. Ryan made a location for No. 1 Kreitemyer, in Lot 6 Block 2 Kuhns subdivision, SE NE SE section 13-1n-1w.

In Marion County, but still in the Centralia field, Illinois-Iowa Power Co. was rigging up rotary for No. 1 fee, NW cor. SE NW SW section 18-1n-1w (Lot 8, Block 59), John Pugh Drilling Co. had rig up for No. 1 Carl Ford, near SW cor. section 7-1n-1e. Campanella Bros. were moving in machine for No. 1 Marchall, near NE cor. SW SW section 18-1n-1e. Hartman and others No. 1 Towne, near NW cor. section 18-1n-1w, was drilling at 1,250 feet. W. F. Lacy, No. 1 Franks & Pfeiffer, near SE cor. NW NW NW section 18-1n-1e was drilling at 710 feet. C. E. Lang moved in rotary tools for No. 1 H. E. Broeker, near NW cor. SW SW section 18-1n-1e.

J. D. Reynolds and others No. 1 Holeman and others, near NW cor. SW NW NW section 18-1n-1e, was drilling at 1,000 feet. Ross & Coleman No. 1 Marshall near NE cor. SW NW section 18-1n-1e spudded in.

In Clay County, Kingwood Oil Co. and others had rig up for No. 1 Bressenden—Land Bank, C S half SW NW section 8-3n-7e.

In Richland County, Pure Oil Co. made location for No. 1 Mitchell, C S half NE NW section 5-3n-9e and for No. 2 Pflaum, C N half NW NE section 5-3n-9e. M. A. B. Oil Co. No. 1 Fred Allison, 330 feet from N and 400 from E lines of section 29-3n-9e was moving in rotary.

In Shelby County Henshaw & Whisenant were moving in rotary for No. 1 Mila McKittrick, C SE SE SE section 19-10-4e and Clint Milan and others made a location for No. 1 Kull, SE SE SE section 4-11n-3e.

Important Tests

In Bond County, Whitehead & Morey were drilling at 3,125 feet in No. 1 Polland, NW SE SW section 26-6n-2w.

In Edgar County, Sun Oil Co. No. 1 Goodwin, C W half NE SE section 22-13n-12w, (measuring from the Indiana principal meridian) was drilling at 850 feet, in blue shale.

In Franklin County, Washburn Petroleum Co., C E half SE SE section 6-5s-4e, set 6-inch casing at 2,620 feet and was at a total depth of 2,640 feet.

In Jefferson County, Nollem & Benoist No. 1 Kelly, NE NW NE section 25-4s-2e, had Benoist sand at 2,695-2,706 feet, with no showing of oil. Six-inch casing was set at 2,668 feet and the well was drilling at 2,753 feet. H. J. Foltz No. 1 Carroll, NE NE SE section 16-2s-1e, was drilling at 2,225 feet. Carter Oil Co.'s No. 1 Carl Hall location is corrected to C SE NE SE section 4-1s-2e. Carter Oil Co. No. 1 Inez Cobb, C W half NW SW section 10-1s-2e was drilling at 1,710 feet.

In Edwards County, Leach Bros. No. 1 Lee, SW NE SE section 11-1s-10e was drilling shale at 3,159 feet.

In Marion County, W. D. Shedden and others No. 1 Pawlica, SW NE SW section 33-2n-1e, had Benoist sand at 1,775-89 feet and it was dry. Operations were suspended at 1,910 feet pending orders from the owners.

In Wayne County, Benedum & Trees Inc. No. 1 Gloyd, C E half E half SE section 32-2n-7e was drilling at 2,070 feet.

In Richland County, Pure Oil Co. No. 3 John Hundley, C E half SW NE section 5-3n-9e had pay at 2,948-53 feet and 2,955-58 feet and set 5½-inch casing at 2,929 feet. Same company No. 4 Hundley, SE NW NE section 5-3n-9e, found pay at 2,950-56 feet and casing was being run. Pure Oil Co. No. 1 Pflaum, C N half NE NE section 5-3n-9e, was drilling at 2,358 feet. Pure Oil Co. No. 1 Colburn, SW SW SW section 33-4n-9e was drilling at 1,444 feet. Pure Oil Co. was drilling at 225 feet in No. 1 Harry Wade, C S half SE SW section 33-4n-9e. Pyramid Petroleum Corp. No. 1 University of Chicago land, 300 feet from N and 592 from W lines of section 26-4n-10e had rotary moved in. Kingwood Oil Co. No. 1 Elliott, C N half SE NE section 28-4n-10e was drilling at 1,920 feet.

In Effingham County, Kingwood Oil Co. No. 1 McWhorter, C E half SE NW section 15-6n-6e was drilling at 3,031 feet. It had a small showing of oil at 2,975-80 feet. Graham & Duncan No. 1 Rickers, C N half SE NW section 18-6n-7e was spudded.

In Jasper County, Obermyer No. 1 Atkins, C NW NW NE section 3-6n-9e, corrected location, was drilling at 1,310 feet.

In Fayette County, Carter Oil Co. No. 2 Dove, C E half SE NW section 15-8n-3e had Benoist sand at

1,497-99 feet, total depth, and will complete with standard tools.

CENTRAL OHIO AND LIMA

LIMA, Ohio, Apr. 4.—Central Ohio operators marked up eight new gas wells, one oil well and one dry hole during the past week.

In Athens County, Carthage Township, Ohio Fuel Gas Co. No. 4 F. I. Caldwell, Fraction 12, made 2,160,000 feet of gas from the Keener sand at a depth of 1,253 feet.

In Guernsey County, Cambridge Township, Hayes Feguson No. 1 Murray and Campbell Estate, in the city of Cambridge, made a 100,000-foot gas well in the Berea sand at 1,097-98 feet. In Washington Township, the Ohio Fuel Gas Co. No. 1 J. H. Gray, section 13, had 950,000 feet of gas in the Berea sand at 1,311-19 feet.

In Licking County, Mary Ann Township, Rutledge and others No. 1 M. F. Berger, section 11, is good for 115,000 feet of gas in the Berea sand at 860 feet.

In Morgan County, Windsor Township, Burt & Son No. 19 F. H. Tuttle, Lot 1097, will make a 1-bbl. pumper from the Peeker sand at 404-30 feet.

In Muskingum County, Wayne Township, the Ohio Fuel Gas Co. No. 1 L. F. Lutz, section 4, is good for 480,000 feet of gas from the Clinton sand at 3,781 feet.

In Stark County, Jackson Township, Obermiller No. 1 B. B. Humbert, section 1, made 510,000 feet of gas from the Clinton sand at 4,370-88 feet. In Jackson Township, the Ohio Fuel Gas Co. No. 2 G. H. Deuble, section 2, started with 366,000 feet of gas from the Clinton sand at 4,382-4,423 feet. In Perry Township, Lyons No. 2 Sippo Lake Club Co., section 2, made a 250,000-foot gas well in the Clinton sand at 4,431-69 feet.

In Washington County, Grandview Township, McMahan No. 2 on fee property was drilled to a depth of 1,694 feet and abandoned.

Lima Field

An acid treatment was given the Green sand test drilled jointly by the Sun Oil Co. and A. J. West on the A. M. Clouse tract, section 7, Clinton Township, Seneca County. The well was acidized with 3000 gallons and equipment is being reinstalled. The well pumped 40 bbls. of oil the first day after being drilled in, but had settled to 4 bbls. a day before being acidized.

In Putnam County, Blanchard Township, G. K. Rodgers No. 1 Fred Hector, section 22, is a 3-bbl. pumper from the Trenton lime at 1,350-90 feet.

EASTERN KENTUCKY

ASHLAND, Ky., Apr. 4.—Only one completion is included in the reports from Eastern Kentucky fields this week. Pryse Fraley completed No. 3 S. W. Steel in the Ida May district of Lee County. It started at 10 bbls. daily.

The report by counties for the week is as follows:

In Lee County, Petroleum Exploration is down 400 feet in No. 19 Pryse Heirs land in Ida May district. In the Big Sinking district, C. B. Ullum and others are down 750 feet in No. 4 Sarah Srinven on Billie's Fork W. G. Wiggins and others have reached the 900-foot mark in No. 1 M. V. Bailey on Billie's Fork. The Fleiger Oil Co. is drilling at 510 feet in No. 1 Andrew Combs.

In Powell County, South Penn Oil Co. was drilling at 250 feet in No. 13 Adams and Lamberson land on South Fork in the South Fork district. Wireman Brothers are drilling at 100 feet in No. 4 on Albert Stewart land, also on South Fork.

In Floyd County, Kentucky-West Virginia Gas Co. is idle at No. 567 on M. Slone and M. D. Slone on Levisa Fork in Floyd County. Same firm was drilling at 1,228 feet in black lime in No. 569 Jeff Jervis on Home Branch of Buffalo Creek and was down 200 feet in slate in No. 570 Clarence Neeley, in the same locality. Kentucky-West Virginia Gas Co. had reached the 2,110-foot level in No. 5233 John F. Burchett land, on Cow Creek.

In Martin County, Kentucky-West Virginia Gas Co. is down 892 feet, in sand, in No. 5239 on the C. W. Preece land on Coldwater Fork in Martin County, and is idle at 1,477 feet in No. 5237, also on the Preece land. The same firm is shutdown in No. 5240 C. W. Preece land, on Coldwater Fork, and is down 892 feet in salt sand in No. 5238 on M. M. Pratt land in same locality.

In Pike County, Inland Gas Corp. is still fishing in No. 196 Helen Leslie land, on Levisa Fork in Pike County and is spudding at No. 199 on the same land.

WESTERN KENTUCKY

OWENSBORO, Ky., Apr. 4.—Results of deep drilling in two wells, one in Breckinridge County, and the other in Ohio County in the Western Kentucky fields, were interesting but not satisfactory. In the case of the Breckinridge County test, which was drilled in the Cloversport district, another deep test will be drilled because of the showing in Corniferous lime, which was not sufficient to make it possible to develop a paying well, but was believed to warrant further exploration. This test was drilled by Flesher, Galey and others and was known as No. 4 Murray Tile Co. It was given a 1,500-gallon acid treatment in Corniferous lime at 1,632-44 feet, which had yielded a showing of oil, but the results of the acid were not satisfactory, and the hole was plugged back to 894 feet and the Cloversport gas sand acidized with 1,000 gallons at 882-89 feet. The results of this treatment could not be ascertained at this writing. The owners announced their intention of making another attempt to find production in the lower levels in the same district. In Ohio County, Fordsville district, Cumberland Petroleum Co. and others No. 1 joint line test was abandoned as dry at 2,255 feet. Top of the shale was found at 1,906 feet and top of the Corniferous lime at 2,038 feet.

Other operations are summarized as follows:

In Breckenridge County, Tar Springs district, William Rollins and others No. 1 Acos Brothers, a deep test, was drilling at 605 feet.

In Butler County, 1 mile southeast of Neefus, J. C. Miller, Trustee, and others No. 1 Minnie Embry, Corniferous test, was drilling at 265 feet. In Rochester district, W. E. Hupp and others No. 1 Estill Peay, was moving in.

In Daviess County, Utica district, Amos Shaffer and others No. 3 Boyd Bristow, was drilling in Jett sand 1,110-20 feet with 700 feet of oil in hole. In Maxwell district, Cumberland Petroleum Co. No. 1 Mrs. May T. May, was rigging up. In Hewletts' Store district, Hall & Booth No. 2 Y. Martin, was drilling at 200 feet. In Red Hill district, Rex-Pyramid Oil Co. No. 8 M. D. Yeiser, was drilling at 150 feet.

In Hancock County, Pellville district, O. D. Vickers & White No. 1 M. Remington, was moving in. In Easton district, William Ralston and others No. 6 Oat Smith, was drilling at 170 feet.

In Henderson County, Hamilton Ferry district, Hoosier Drilling Co. No. 1 C. T. Blackwell, deep test, 565,000 feet of gas from Jackson sand 1,538-55 feet, going to drill deeper. In Niagara district, Clark & Snyder No. 4 J. H. Knight, 4 bbls. naturally, Niagara sand 685-701 feet, total depth 704 feet, going to shoot 12 feet of sand with 60 quarts.

In McLean County, Island district, W. E. Hupp and others No. 1 George R. Burks, was rigging up. Hume, Steele and others No. 1 Robert Nall, was dry in Jett sand at 1,470-80 feet, going to Barlow sand.

In Muhlenberg County, Paradise district, South Penn Oil Co. No. 2 Rogers Crescent Coal Co., deep test, two strings of tools in hole, pulling pipe and abandoning at 1,818 feet. Going to new location. Bremen district: Peerless Oil Co. No. 1 C. C. Gossett, deep test, was drilling at 1,605 feet.

In Ohio County, Adabury district, Nollem Oil & Gas Co. No. 5 Vincent Crowe, was drilling at 100 feet. Rex Pyramid Oil Co. No. 17 Len Stinnett, 5 bbls., Stray sand, total depth 635 feet. In Friendship Church district, A. Teller and others No. 4 Medcalf, 10 bbls., Barlow sand 585-603 feet, shot with 60 quarts. In Dundee district, Charles Marsh and others No. 5 Mrs. J. C. Nabors, was spudding in. In Heflin district, W. M. Damron No. 4 G. C. Rowan, was drilling deeper from Jones sand and going to Bethel sand. In Clear Run district, Frank Randall and others No. 1 Duke Heirs, was a dry hole.

Oklahoma Fields

(Continued from Page 80)

operator's No. 1 Patton, SE cor. section 29-1n-3w, also was a Tussy location.

In Murray County, R. R. Marsh and others were rigging up to deepen No. 1 Vinsonite, SE SW NE section 34-1s-1e, an old well.

In Stephens County, Charles W. Scott No. 1-B Beely, NE NW SW NE section 9-3s-5w, was drilling below 150 feet.

In Beckham County, West Oak Co. No. 1 Barton, CSL N half NW section 14-9-25w, Erick area, had erected derrick.

East Texas Fields

(Continued from Page 68)

1,150 bbls. W. B. Omohundro No. 26 J. R. Pace, 3,720-3,873 feet, 800 bbls.; No. 27 J. R. Pace, 3,730-3,865 feet, 760 bbls. W. H. Peckham No. 2 Munger, 3,720-3,891 feet, 750 bbls. Perkins & Cullum No. 16 S. B. Burnett and others A, 1,512-30 feet, 10 bbls. Pois & Schulz No. 2 Ed Foster K, 2,111 feet, dry. George B. Ray and others No. 1 Sue Mitchell, 3,831-78 feet, 960 bbls. Retsal Drilling Co. No. 1 J. F. Miller B, 3,642-3,861 feet, 700 bbls.; No. 1 J. F. Miller A, 3,635-3,741 feet, 900 bbls. H. A. Schaeffer Oil Co. No. 4 First National Co., 3,655-3,833 feet, 950 bbls. Stidham & Thrasher No. 1 J. A. Seay, 3,650-3,768 feet, 900 bbls. Sam K. Viersen No. 1 H. Wigley, 3,791-3,847 feet, 656 bbls. H. H. Wegener No. 1 First National Co., 3,635-3,868 feet, 720 bbls. West & Medder No. 1 Williams and others, 4,004 feet, dry. T. L. Wynne, Trustee No. 2 Sue Mitchell, 3,900-54 feet, 1,500 bbls.

Bridwell Oil Co. No. 1 First National Co. A, 3,624-3,852 feet, 888 bbls. L. T. Burns No. 26 First National Co., 3,708-3,879 feet, 1,150 bbls. Chapman & McFarlin No. 2 W. P. Ferguson, 3,801-81 feet, 1,160 bbls. C. O. Davis No. 1 Mrs. Anna Mangold, 3,718-3,885 feet, 1,675 bbls. E. C. Oil Co. No. 4 George F. Lebus, 3,714-3,808 feet, 888 bbls. Hamilton-Worsham No. 1 Hamilton, 3,785-3,862 feet, 650 bbls. Kadane, Inc. No. 2 J. A. Kemp B, 3,655-3,758 feet, 1,056 bbls. Lewis Production Co. No. 5 Wichita National Bank, 3,689-3,715 feet, 485 bbls. Manson Oil Co. No. 1 Fassett, 3,909-57 feet, 760 bbls. Murray & Griffey No. 1 Pace A, 3,770-3,901 feet, 400 bbls. Perkins & Cullum No. 9 W. H. Chilson, 711 feet, dry. Petroleum Production Co. No. 3 First National Co., 3,638-3,886 feet, 650 bbls. Prince Brothers No. 1 C. P. Sheldon, 3,741-3,915 feet, 640 bbls. Rathke Oil Co. No. 1 W. B. Throckmorton, 3,493-3,697 feet, 50 bbls. Reed, Glass & Crenshaw No. 6 First National Co., 3,589-3,840 feet, 1,250 bbls. Staley Oil Co. No. 6 First National Co., 3,793-3,878 feet, 550 bbls. John L. Swanner No. 1 A. K. Norman, 1,872 feet, dry. Sunray Oil Co. No. 1 First National Co., 3,775-3,880 feet, 550 bbls. Texas Co. No. 1 P. W. Watts, 1,782 feet, dry. Trico and others No. 1 W. L. Hodges, 3,825-3,921 feet, 350 bbls. Mrs. Hulda B. Wallace No. 1 J. C. Strauss, 3,650-3,870 feet, 1,230 bbls. Burns & Long No. 27 First National Co. D, 3,649-3,868 feet, 1,344 bbls.

Young County

W. D. Ambrose No. 1 Ann Brodgen, abandoned location. Anzac Oil Corp. No. 1 E. S. Graham, 3,682-4,000 feet, 12 bbls. Kittery Oil Co. No. 5 J. B. Daniel, 907 feet, dry. A. T. Strong No. 2 H. C. Kunkel, 3,836-3,956 feet, 800 bbls.

L. T. Burns No. 1 W. T. Rogers, 987 feet, dry. Chambers & Humphrey No. 9 S. M. J. Benson, 896-905 feet, 60 bbls. George E. Kesterson, Jr. No. 2 Nora R. Finch, 725-28 feet, 5 bbls. Kleiner & Riggs No. 14 J. F. Larimore A, junked 701 feet. Stuckey Oil & Gas Co. No. 1 J. Jeffery, 830 feet, dry. White & Duncan No. 1 Mrs. M. Garvey, 712 feet, dry. T. A. Witt No. 1 Haygood, 750 feet, dry.

EAST TEXAS FIELD COMPLETIONS

(One-hour gauges)

Gregg County—Longview Area

Arkansas Fuel No. 7 C. C. Clements, 3,614-38 feet, 64 bbls. Atlantic Refining Co. No. 27 Duncan, 3,624-3,760 feet, 92 bbls. Bond & Dillard No. 15 J. C. Barrett, 3,645-75 feet, 60 bbls. Deep Rock Oil No. 24 B. Jones, 3,615-95 feet, 50 bbls. Fain & McGaha No. 13 Booknight, junked hole. Margay Oil Co. No. 13 R. Corbin, 3,589-90 feet, 84 bbls. Selby & Lewis No. 13 Ingram, 3,533-50 feet, 84 bbls. Shell Petroleum Corp. No. 18 Stinchcomb, 3,464-3,524 feet, 60 bbls. Sinclair Prairie No. 57 Moncrief, 3,566-3,698 feet, 30 bbls. Sun Oil Co. No. 30 J. W. Aiken, 3,486-3,538 feet, 59 bbls. Superior Oil No. 28 Ingram, 3,526-68 feet, 114 bbls.

Gregg County—Kilgore Area

Grace Oil No. 5 Barton, 3,504-17 feet, 60 bbls. Gulf Oil Corp. No. 33 Alexander, 3,535-56 feet, 55 bbls.; No. 37 G. W. Culver, 3,502-40 feet, 45 bbls. F. A. Fuller No. 5-A F. J. Richards, 3,515-17 feet, 5 bbls. B. F. Phillips No. 4 Greggston heirs, 3,601-05 feet, 27 bbls. Pierce-Moore No. 1 J. B. Laird, 3,534-45 feet, 40 bbls. Roosth-Genecov No. 2 R. Barker, 3,496-3,553 feet, 28 bbls. L. L. Sugar No. 5 G. Davis, 3,624-25 feet, 60 bbls. Tide Water No. 12 W. Clayton, 3,583-3,602 feet, 60 bbls.

Rusk County—Joiner Area

Atlantic Refining Co. No. 4 Keeling, 3,727-3,820 feet, 73 bbls. R. H. Dearing & Son No. 13 A. P. Finny, 3,590-3,660 feet, 60 bbls. Elm Oil No. 5 McElroy, 3,725-33 feet, 60 bbls. General American No. 16 Thompson, 3,740-49 feet, 80 bbls. Granite Oil No. 2 N. C. Young, 3,655-3,700 feet, 95 bbls. Humble Oil & Refining Co. No. 5 R. P. Gramling, 3,597-3,661 feet, 60 bbls. Shell Petroleum Corp. No. 24-B H. Brooks, 3,632-3,723 feet, 30 bbls. Stanolind Oil & Gas Co. No. 35-A M. C. Maxwell, 3,738-97 feet, 35 bbls.

Rusk County—Kilgore Area

Overton Refining Co. No. 6 G. H. Morris, 3,658-3,765 feet, 30 bbls. Shell Petroleum Corp. No. 20 W. P. Moore, 3,698-3,765 feet, 65 bbls. W. B. Tucker No. 7 D. Willis, 3,598-3,605 feet, 25 bbls.

Upshur County—Longview Area

Humble Oil & Refining Co. No. 41 J. K. Edwards, 3,624-98 feet, 48 bbls. Magnolia Petroleum Co. No. 30 H. Hampton, 3,641-51 feet, 50 bbls. Margay Oil No. 16 Victory, 3,581-85 feet, 64 bbls. P. H. Pewitt No. 11 Williford, 3,645-46 feet, 25 bbls.

EAST CENTRAL TEXAS COMPLETIONS

Anderson County

In the Cayuga field, Rosier-Pendleton No. 1 N. M. Willis, 4,018-4,108 feet, 42 bbls.

Franklin County

In the Talco pool, Humble Oil & Refining Co. No. 10 T. J. Dawson, 4,167-4,312 feet, 158 bbls.

Henderson County

In the Flag Lake field, Hines & Hancock No. 1 Dillard, 3,063-76 feet, 330 bbls.

Titus County

Humble Oil & Refining Co. No. 12 Monnig Dry Goods Co., 4,182-4,311 feet, 294 bbls.

Southwest Texas District

By
F. L. SINGLETON

Prospect in San Patricio Field; West Saxet Pool Is Extended

CORPUS CHRISTI, Tex., Apr. 4.—Prospects of opening a new pool east of the Plymouth field, in San Patricio County, together with important extensions and new sand discoveries in the West Saxet field, Nueces County, and the apparent discovery of two small pools along the Balcones fault line in Guadalupe and Medina counties, featured developments in the Southwest Texas district the past week.

Humble Oil & Refining Co. No. 1 Smith & Tolbert, 9,200 feet east of the Plymouth field, and in section 37 of the Fourth Addition of the Taft Farm Lands, San Patricio County, was looked upon as a possible pool opener when it tested 550 pounds of pressure on an eight-minute drill stem test at 4,804-17 feet. Sand with a gas odor was cored at 3,976-81 feet, salt water sand at 4,015-4,446 feet, oil sand 4,524-29 feet, salt water sand 4,575-78 feet, gas sand 4,808-11 feet, and oil sand from 4,812-17 feet. Late in the week the hole was being reamed for a second drill-stem test.

Important Extension

Another important extension was recorded for the active West Saxet field, Nueces County, with the completion of Heep Oil Corp. No. 1 McKenzie. The well is 2,800 feet northeast of production and it flowed 240 bbls. of oil in 18 hours through a 3/16-inch choke. Production is from the main pay at 5,818-21 feet. Location is in the southern part of a 31.6-acre lease in Survey 419. Conroe Drilling Co. No. 1 Morgan, a south outpost test, indicated a major extension to the field after a Schlumberger survey logged sand at 5,625-35 feet. The 5,800-foot sand was missed and the hole is being drilled deeper. If no further showings are found, a test will be made of the shallower sand. Side-wall cores were taken of the 5,600-foot section and saturated sand was recovered. Southern Minerals Corp. No. 1 A. M. French, B.S.&F. Survey 417, apparently defined production from the 5,800-foot sand when it tested 720 feet of oil, 90 feet of oil-cut mud and 90 feet of salt water. While the well will no doubt make a producer, the sand was logged lower than any other test in the field, and it is not likely that production will be extended much farther in that direction.

The railroad commission has placed West Saxet on a 15-acre spacing basis, which was favored by practically all operators.

With the completion of two wells in the recently opened Alfred field, Jim Wells County, an active drilling campaign is getting under way. One mile south of the field T. C. Vaughn and others spudded No. 1 Adams, Block 40 of the Waldron Subdivision. Rowan & Hope and Smith & Story have started offsets to their producers. Rowan & Hope No. 2 Adams, southwest of production, flowed 160 bbls. in 12 hours through a ¼-inch choke, while Smith & Storey No. 1 Adams, 1,100 feet northeast of the discovery, flowed 315 bbls. per day.

The East Premont field, Jim Wells County, received its second producer with the completion of Magnolia Petroleum Co. No. 8 Seeligson, which extended the field 1,280 feet northeast. The well is flowing from the discovery horizon in the Frio formation bottomed at 6,593 feet. Seven-inch casing was cemented at 6,575 feet and the well is shut in for storage after flowing 20 bbls. per hour through a ¼-inch choke.

Jim Wells County

Jim Wells County continues to be one of the most active along the Jackson trend as more wildcat locations are made. Tom Graham, one-half mile east of the Sarco Creek discovery, has been spudded, while a 6,500-foot test in search of the Frio production is to be started on a 700-acre lease southwest of the Alfred field. The East Premont discovery, the first important production developed, has been an incentive for more wildcatting.

Hiawatha Oil & Gas Co. No. 9 Parr, extended the Cockfield production at the Benavides field a half mile east when it flowed 112 bbls. in 24 hours through a ⅛-inch choke with tubing pressure 550 pounds and casing pressure 850 pounds. The hole is bottomed at 5,518 feet and production was obtained by perforating the casing at 5,510-15 feet.

Hopes of opening a new sand in the Ezzell field, Live Oak County, were dimmed when Sam E. Wilson No. 1 Great Southern Life Insurance Co. tested salt water. The section was tested several times through gun perforations, and the hole was plugged back to the Ezzell sand where attempts were being made to complete. The major share of this field lies in the adjoining county of McMullen and it is by far the most outstanding shallow discovery along the Jackson shore line trend in several years. Proven production extends in a northeast-southwest trend for about 4 miles. The trend is undefined and it is estimated that the field will eventually be extended a distance of 10 miles.

Small Chalk Pool

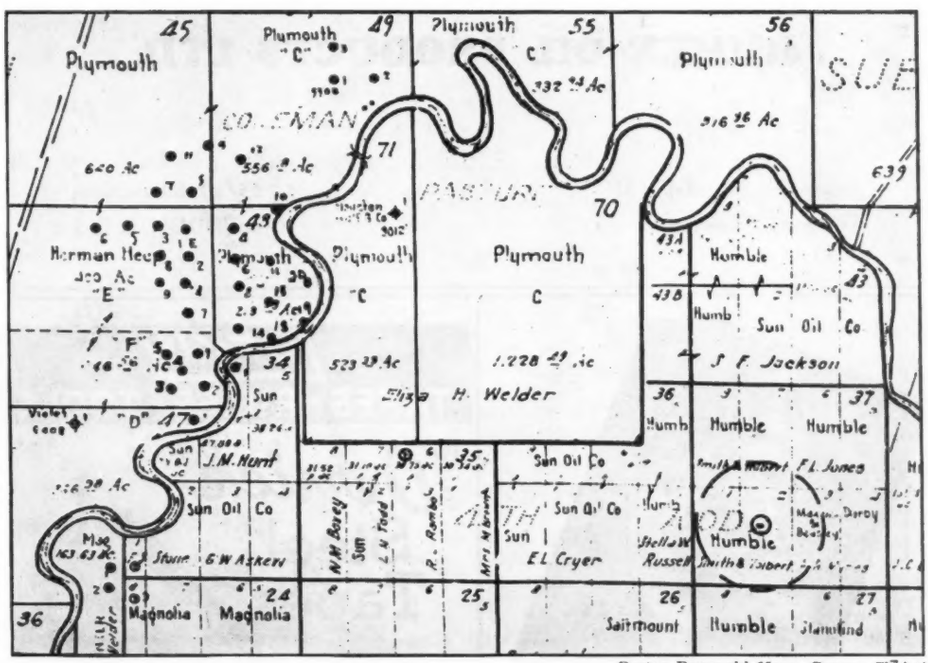
H. G. Spiller No. 1 Wright has apparently opened a small Chalk field in Guadalupe County as it pumped 80 bbls. of acid-water and oil in 23 hours from a corrected depth of 2,290 feet. The hole is being reacidized for another production test. The Chalk was topped last week at 2,167 feet, and 5½-inch casing was cemented at 2,012 feet. The upper portion of the formation is reported to have shown saturation. The field is located 2 miles northeast of Sullivan in the Samuel Highsmith Survey.

In the same county and located in the Nash Creek field, Morris Kallison has abandoned No. 1 Ranft, 830 feet northeast of the discovery well. The hole was quit at 3,140 feet in the Edwards lime and it is reported the rig is being moved over for No. 1 Kelley.

S. F. Ewing No. 1 Riff, 2 miles south of Dunlay, Medina County, which last week logged favorable showings in the Serpentine, is bottomed at 600 feet with a showing of oil. No test will be made at present. It is planned to drill to aproximately 1,000 feet and then plug back if it does not make a well at the lower depth. The operator is of the opinion that a 5-bbl. well can be made in the Serpentine at its present depth. The showing has set off a shallow wildcat campaign in that vicinity as four locations have been made. J. A. Brown spudded No. 1 Senne in the A.C.H.&B. Survey No. 105. F. J. Dykstra No. 2 McMenemu is located in the G. Petty Survey. Gee, Hayes and others No. 1 Conrad, 3½ miles southwest of Noonan, in the J. Keppler Survey, has been spudded. North of Dunlay, Taylor and Pepper No. 1 Saathoff is drilling below 80 feet, while 1 mile south of Dunlay, M. L. Walker has rig up for No. 1 Zuerbuler in the A. Bonamy Survey.

In the same county, J. R. Trentman and others No. 1 Carle Mercantile Co., V. A. Johnson Survey, is bottomed in the Buda lime at 1,905 feet, and the hole is being reamed. A core was taken at 1,840-1,905 feet, but no recovery was made, although a small fragment of Buda lime was obtained. A Schlumberger survey has been run, and casing is expected to be cemented for a production, but the hole may be drilled about 50 feet deeper before the casing is cemented.

Paul Teas and others No. 1 McKnight, an Edwards lime test in Dimmitt County, was shut down after it failed to show anything encouraging after the hole had been cleaned out to a total depth of 7,118 feet. The well had been shut down for several days and it was planned to run casing for a production test.



Porter Regenold Maps, Corpus Christi

Humble Oil & Refining Co. No. 1 Smith and Tolbert, a wildcat 9,200 feet east of the Plymouth field, San Patricio County, which has shown evidence of production

COMPLETED WELLS

Completed wells in proven Southwest Texas fields, with their total depth and initial 24-hour production of the producing wells were as follows:

Bastrop County

North Dale field: Marts & Beavers No. 1 Harris, 2,640 feet, abandoned.

Caldwell County

Burdette Wells field: Lanning & Coffield No. 4 Withers, 2,337 feet, 15 bbls., pumping.

Dale field: R. A. Ogden No. 1 Clingsmith, 2,598 feet, abandoned. Salt Flat field: Martel Petroleum Co. No. 9 Connelly, 2,685 feet, 39 bbls., pumping. Luling field: Trio Oil Co. No. 3 Byrd, 2,088 feet, 50 bbls., pumping; Millican-Norman No. 14 Lampkins, 2,106 feet, 50 bbls., pumping.

Duval County

Benavides field: Circle Oil Co. No. 2 West, 4,582 feet, 233 bbls., 21 hours, 9/64-inch choke. Humble Oil & Re-

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fining Co. No. 2-B Rossi, 5,356 feet, 180 bbls., ¼-inch choke. Republic Production Co. No. 6 Buoy, 4,781 feet, 92 bbls., ⅛-inch choke. Southwood Oil Co. No. 2 Walstead, 5,379 feet, 150 bbls., ¼-inch choke. Hoffman field: Cox & Hamon No. 1 Green, 2,719 feet, 88 bbls., pumping; Cox & Hamon No. 5 Cuellar, 2,856 feet, perforated casing 2,685-87 feet, 129 bbls., jetting. Lundell field: Government Wells Oil Co. No. 19 Lundell, 1,514 feet, 4 bbls. per hour, ¾-inch choke; Piedra De Lumbre, 2,043 feet. 52 bbls., jetting. Seven Sisters field: A. J. Brinkoeter No. 9-A Garcia, 2,649 feet, 100 bbls., ⅜-inch choke; Pan American Production Co. No. 9-A Welder, 1,718 feet, 50 bbls., ⅜-inch choke.

Guadalupe County

Darst Creek field: Ken Blackmar Oil Co. No. 1 Posey. 2,616 feet, 49 bbls. oil, 69 bbls. water, pumping.

Hidalgo County

Mercedes field: Union Sulphur Co. No. 12 American Rio Grande, 7,497 feet, 75 bbls. distillate, ⅜-inch choke.

McMullen County

Calliham field: Marion Production Co. No. 3 Lark, 1,072 feet, 10 bbls., pumping. Ezzell field: Harry Ezzell No. 6-H fee, oil sand 1,483-1,520 feet, 60 bbls. pumping; Harry Ezzell No. 1-H fee, 1,530 feet, abandoned.

Milam County

Rockdale field: W. A. Jones No. 2 Coffield, 574 feet, 5 bbls. pumping.

Nueces County

Flour Bluff field: Humble Oil & Refining Co. No. 1 State Land, 6,710 feet, abandoned. Luby field: Seaboard Oil Corp. No. 13 Luby, 5,721 feet, perforated casing at 4,342-45 feet, 108 bbls., ⅛-inch choke. West Saxet field: Rand Morgan No. 1 fee, 5,865 feet, perforated casing 5,349-53½ feet, 9 bbls. per hour, ⅛-inch choke. Phillips Petroleum Co. No. 2 McKinzie, 5,825 feet, perforated casing 5,817-20 feet, 241 bbls., 11/64-inch choke. Phillips Petroleum Co. No. 3 McKinzie, 5,830 feet, perforated casing 5,817-20 feet, 260 bbls., 5/32-inch choke. Renwar Oil Co. No. 3 McKenzie, 5,834 feet, 83 bbls., 3/16-inch choke.

Refugio County

Refugio field: Houston Oil Co. No. 38 Rooke, 6,226 feet, 179 bbls., ⅛-inch choke. Tomoconnor field: Quaintana Petroleum Co. No. 7 Bauer, 5,910 feet, 1,040 bbls., quarter-inch choke. Quintana Petroleum Co. No. 63-A O'Connor, 5,938 feet, 617 bbls., ¼-inch choke. Quintana Oil Co. No. 25-C O'Connor, 5,925 feet, 1,333 bbls., ⅜-inch choke.

San Patricio County

Plymouth field: Plymouth Oil Co. No. 96-C Welder, 5,476 feet, 8 bbls., 9/64-inch choke.

Starr County

San Domingo field: Clopton & Reed No. 2 Roos, 2,500 feet, perforated casing 2,381-84 feet, dry gas well.

Webb County

Killam field: O. W. Killam No. 9 Garcia, 1,989 feet, 40 bbls., pumping. Daubert & Lipscomb No. 5-A Garcia, 2,030 feet, perforated casing 2,000-08 feet, 10 bbls. per hour jetting. Oilton field: Oil Wells Drilling Co. No. 1 Garcia, 2,007 feet, perforated casing 1,983-89 feet, 4 bbls. per hour 5/16-inch choke.

Filipinos May Get Long Desired Tests of Islands for Oil

Negotiations are under way between Standard-Vacuum Oil Co. and President Manuel Quezon at Manila whereby the foreign operating subsidiary of Socony-Vacuum and Standard of New Jersey would be granted exploration privileges on the Philippine Islands.

P. W. Parker, vice president of Standard-Vacuum, is in Manila, it was learned in New York, and probably will conclude negotiations by the middle of February, if satisfactory terms to both parties can be arranged. Sources of the Phillipine National Assembly quoted by the Associated Press in dispatches from Manila said President Quezon was understood to have offered a contract under which the company would pay the government 5 cents a hectar (about 2½ cents per acre) on all leases for prospecting purposes.

President Quezon has been active for some time in seeking companies capable and willing to explore the Phillipine Islands' oil-producing possibilities. Several years ago, Standard-Vacuum interests investigated conditions, but withdrew their support of an exploration program when existing laws were found unsatisfactory. It was reported that undesirable features of the laws have been revised recently again making the possibilities meritous of consideration.

West, Central and Panhandle Texas

By MITCHELL TUCKER

Wasson-Denver Area Proven Productive on 25,000 Acres

FORT WORTH, Tex., Apr. 4.—Gulf Oil Corp. No. 1 Dixon, closely watched wildcat in Yoakum County about midway between the Bohago and Denver areas, has cored over 30 feet of saturation to a total depth of 5,491 feet, with only slight porosity. The hole is being cleaned out after shot, and heading about 100 bbls. of oil daily.

Gulf's two important southwest and southeast exploratory holes in the Slaughter field of southern Hockley County have served to establish the water table for the field, and are now plugging back in an attempt to complete as producers. A 2-mile southwest outpost from production, No. 1 Mallett, has been plugged back from 5,125 to 5,055 feet and is standing for cement to set. A wildcat 3 miles further to the southwest of this location, Larry E. Hults No. 1 P. J. Ross-Gulf in Terry County, has set surface pipe and is standing for cement to set. Gulf's No. 1 Gordon, three-fourths mile southeast of production, is plugging back by stages from its total depth of 5,106 feet in order to definitely establish the water level. Best flow from this well gauged 110 bbls. of oil in 24 hours, with considerable water. First oil was from 4,970-75 feet, with production increases at 4,990 and 5,040-45 feet.

Denver Extension

Shell Petroleum Corp. No. 1-D Baumgart, has extended production three-fourths of a mile to the northeast on the southeast portion of the Denver area on the Yoakum-Gaines County line. The well responded favorably to a 5,000-gallon acid charge, gauging 348 bbls. initially in 24 hours, total depth 5,005 feet. This new Wasson field completion has gone one step farther in closing the 5-mile gap between the Wasson and Bennett fields. Reliable markers are all checking closely in both fields, and some geologists are beginning to contour the two structures as one. Proven productive area in the Wasson-Denver district comprises about 25,000 acres.

To the northwest of the Denver area, Shell Petroleum Co.'s 1½-mile outpost wildcat, No. 1 Roberts, in section 793, Block D, has found the Yates marker favorably and encountered high gas pressures in it. A new trend or extension of the major structure is indicated in this direction, as the well is checking over 80 feet higher than nearest producers in the field.

The fifth producer for the Duggan field in southern Cochran County is in the stage of completion, as Devonian Oil Co. and others No. 2-A Duggan is swabbing considerable oil before acidizing.

Central Basin

Ector County continues far in the lead of activity for the central portion of the basin, with 102 wells actually drilling and 22 rigging up. The Harper, Foster, Goldsmith, South Cowden and Penwell areas are most active. A new peak potential was established in the Harper field last week, as Continental Oil Co. No. 2-27 Rumsey flowed 3,055 bbls. daily on official gauge. Production is from 4,050-4,140 feet, after being shot with 240 quarts. Previous peak potential was 2,998 bbls. Five other completions were made at Harper, and 11 in the entire Ector County.

Attention was turned to the Hoover area in central west Crockett County again last week. In section 1, Block 1, G.C.&S.F. Survey, the W. L. Bradley and others No. 1 Hoover, southwest of production, is flowing about 15 bbls. hourly of 22-gravity oil while drilling ahead at 1,450 feet. A strong gas showing was encountered at 1,364 feet.

Indicating a possible closing of the 6-mile gap between the Chalk and Snyder fields of Howard County, H. L. Lockhart No. 1 A. R. Huesinger is swabbing about 300 bbls. daily during the testing period. The well was shot with 940 quarts from 2,713 to 3,860 feet.

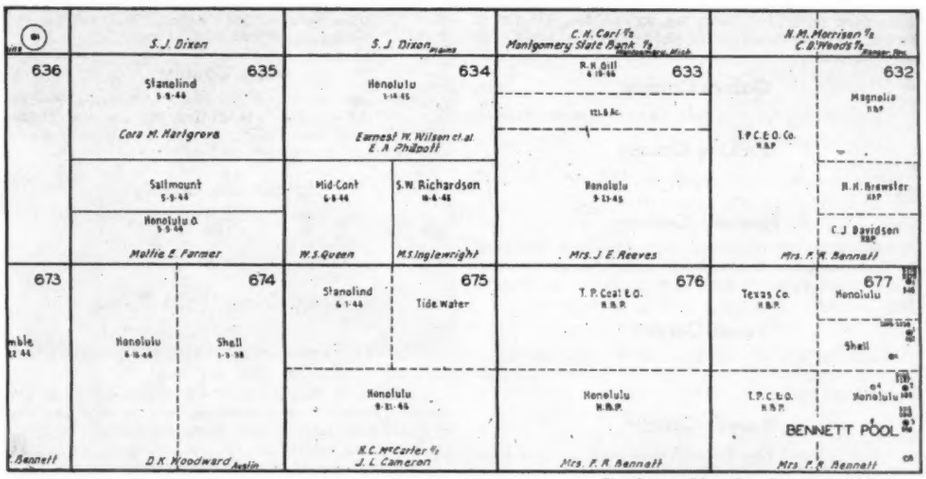
Ordovician Tests

Magnolia Petroleum Co. and others No. 1-A McKee, deep test in the Imperial area of northern Pecos County, is moving in rotary tools again to core ahead below 5,444 feet. The 7-inch casing has been pulled, and 9-inch hole will continue in search of Ellenburger production.

Stanley A. Thompson No. 1 Elsinore, south of Fort Stockton, continues to fish for bailer at 7,210 feet.

Floyd C. Dodson and others No. 1-A Texas American Syndicate, northern Brewster County, is sidetracking tools lost at 7,751 feet. Drilling is now below 7,748 feet. Rainbow showings of oil had been reported in this test before encountering the fishing job.

Humble Oil & Refining Co.'s important deep Tom Green County wildcat, No. 1 Lewis and Wardlow, testing in the Ellenburger, showed only a small amount of sulfur gas and water during 20-minute drill stem test from 6,994 to 7,180 feet. Drilling continues in the Ellenburger dolomitic section at 7,450 feet.



Southwest Mapping Co., Fort Worth

Gulf Oil Corp.'s important wildcat about midway between the Bennett pool and the Bohago area in southern Yoakum County, No. 1 S. J. Dixon has cored about 30 feet of saturation with slight porosity, and is now cleaning out after shot. It is circled on map about 4 miles northwest of Bennett pool production

WEST CENTRAL TEXAS

Apparent opening of a new oil pool in southwestern Jones County, 1½ miles east of the old Noodle Creek field, discovered 11 years ago, put acreage and royalty prices for that area on a new high the past week as individuals and independents rushed to buy around the Humble Oil & Refining Co. No. 1 I. N. Irwin.

The well cored 17 feet of porous, well-saturated Fisher County lime, about 100 feet below the regular Noodle Creek producing horizon, at 2,550-67 feet and cemented 6-inch casing above the showing. With plugs drilled out, it was considered probable that acid treatment will be given the well.

It is approximately 1½ miles east of the Humble's Bickley lease in the field proper, being 330 feet out of the southwest corner of section 48-18, T.&P. Survey. Acreage was quoted at $7.50 and royalty at $50 per acre base outside the Humble block. Humble, on the strength of the showing, renewed leases on about 5,000 acres lying on the east side of the field which were due to expire this year and acquired additional interests bringing its total holdings to more than 11,000 acres in the vicinity.

In the Ivy pool, Shackelford County's second Palo Pinto producer, was completed for an estimated 1,200 bbls. of oil per day after acidization with 1,000 gallons at 3,189 to 3,212 feet, total depth. The well is Danciger Oil & Refineries No. 2 J. E. McCowan, in the southeast of section 158, B.B.B.&C. Survey.

In the north end of Jones County's Avoca pool, Fain-McGaha Oil Corp. and Sinclair Prairie Oil Co. spudded a test on the property of the Swedish Evangelical Lutheran Church following completion of a west and a diagonal southwest offset, both for large producers. The test on church land is in the southwest corner of the east half of the northeast quarter of section 190, B.B.B.&C. Survey. To the west, Fain-McGaha and Sinclair Prairie No. 2 Olson made a flow of 639 bbls. in eight hours from natural Palo Pinto lime at 3,220-33 feet, and to the southwest, Humble No. 6 Hollums rated the largest potential for the north end of the field with a flow of 530 bbls. in four hours from the same lime at 3,224-43 feet.

Roy L. Crawford and Harvey W. Brown of Fort Worth made location for another, the fourth, southwestern Throckmorton County deep test as the No. 1 Reynolds Cattle Co., on the northwest side of N. Thompson Survey, an irregular plat for which footage from the lines was not given. Ungren & Frazier of Abilene was awarded contract. Humble's deep test on the Reynolds ranch, to the west, was abandoned at 3,995 feet.

James Pool

The James pool in southern Young County, 6 miles northeast of Graham, continues to grow and add impressive producers. Thomas D. Humphrey completed No. 2 Dodd in the T.E.&L. Survey for an official gauge of 1,500 bbls. last week, from saturated Smithwick lime 3,844-3,925 feet. The well was heavily acidized. Eight other rigs are running in the James pool.

Officials of the railroad commission will hear testimony on April 16 to determine whether or not a vacuum will be pulled in the Guitar field in southern Jones County. Hearing will be held at Abilene.

PANHANDLE DISTRICT

Reaching the lowest mark in several years, only five completions were added in the Panhandle district last week, having an aggregate daily potential of 2,115 bbls. Ten new wells were begun.

Possibly an extension of the trend play northward from the West Texas Basin area, leasing activities are strong through Lubbock, Hale, Floyd, Lamb, Bailey and other southern Panhandle counties. Ten-year commercial leases are being taken by such companies as Stanolind, Magnolia, Texas, Humble, Sun, Continental, and others.

Panhandle Wildcats

Etz & Robertson No. 1 Enochs, wildcat in Bailey County on the Floyd County school lands, which has been fishing for lost bailer several weeks, is now drill-

ing by whipstock at 4,000 feet. Former total depth was 4,080 feet.

The James R. Macon, important wildcat in Ochiltree County, made a drill stem test last week in chalky lime from 5,000 to 5,080 feet, and showed 6,000,000 feet of gas before acidizing. Total depth is 6,274 feet, and the operators plan to continue exploration to their original objective of 8,000 feet.

WEST TEXAS COMPLETIONS

(24-hour gauges)

Andrews County

Humble Oil & Refining Co. No. 1 Kuykendall, 4,473-4,500 feet, 16 bbls.

Crane County

Ennescrane Oil Co. No. 4-C Hughes, 2,050-90 feet, 954 bbls. Bert Fields No. 14 Anna Gibbs, 2,296-2,300 feet, 792 bbls.

Ector County

Harry Adams No. 1 Parker, abandoned location. Amerada Petroleum Corp. No. 7 Cummins, 4,224-80 feet, 140 bbls. Barnsdall No. 9 Cowden, 3,946-4,150 feet, 2,008 bbls.; No. 11 H. Foster, 4,090-4,281 feet, 608 bbls. Continental Oil Co. No. 1 J. L. Johnson, 4,115-4,245 feet, 700 bbls.; No. 2 T. & P. Land Tr., 4,058-4,180 feet, 3,015 bbls. E. E. Fogelson No. 8-B University, 3,320-3,641 feet, 576 bbls. Gulf Oil Corp. No. 78 Goldsmith, 4,188-4,250 feet, 2,008 bbls. Phillips-Pure No. 19 Cowden, 4,075-4,155 feet, 1,679 bbls.; No. 22 Cowden, 4,085-4,150 feet, 3,343 bbls. Superior Oil No. 11 Cowden, 4,055-4,260 feet, 1,026 bbls.

Gaines County

Continental No. 1-45 Moore, 4,825-4,975 feet, 561 bbls.

Hockley County

Honolulu Oil No. 1-51 Slaughter, 4,891-4,973 feet, 917 bbls.

Howard County

Continental No. 6-A Clay, 1,821-3,239 feet, 545 bbls. F. W. Merrick No. 3 D. Roberts, 2,972-78 feet, 506 bbls. Moore Brothers No. 4-A T. & P. Land Tr., 2,650-2,830 feet, 529 bbls.

Pecos County

Devore & Minnich No. 1 University, dry and abandoned at 1,722 feet. Ohio Oil Co. No. G-1-T Yates, 365-90 feet, 126 bbls.

Reeves County

J. C. Hill No. 1 Ely, dry and abandoned at 4,370 feet.

Terrell County

R. A. Basurto No. 1 Phelps, abandoned at 5,600 feet.

Upton County

Bennett Oil No. 5 Sherk, 2,400-52 feet, 477 bbls. Brown-Hancock Oil No. 3-D Baker, 2,123-2,215 feet, 994 bbls. Humble Oil & Refining Co. No. 21-A Ricker, 2,131-54 feet, 102 bbls. J. S. Pittman No. 1 Elder, dry and abandoned at 3,065 feet. Texas Co. No. 38 King, 2,711-26 feet, 21 bbls.; No. 39 King, 2,391-2,402 feet, 44 bbls.

Ward County

C. W. Clark No. 2 Wathen, 2,215-95 feet, 8 bbls. Cullum & Alexander No. 2 Brahanson, 2,301-43 feet, 278 bbls. Gulf Oil Corp. No. 83 Estes, 2,524-2,940 feet, 530 bbls.; No. 85 Estes, 2,497-2,605 feet, 1,064 bbls.; No. 94 Hutchins, 2,515-2,760 feet, 175 bbls.; No. 99 Hutchins, 2,574-2,750 feet, 1,273 bbls.; No. 93 O'Brien, 2,610-2,942 feet, 35 bbls. Hadlock & McFarland No. 1 Hayes-Monroe, temporarily abandoned. Magnolia Petroleum Co. No. 2-46 Sealy, 2,737-2,856 feet, 15 bbls. Lem Peters No. 1 Bertner, 1,821-1,945 feet, 212 bbls. Sinclair Prairie No. 11 Archenhold, 2,875-3,030 feet, 410 bbls.

Winkler County

J. T. Barnes No. 1 A. P. Crume, 3,270-3,306 feet, 429 bbls. Gulf Oil Corp. No. 2 Scarborough, 2,932-3,200 feet. 173 bbls. Magnolia Petroleum Co. No. 138 Walton, 3,190-3,209 feet, 189 bbls.; No. 142 Walton, 2,849-2,939 feet, 454 bbls. Sinclair Prairie No. 2-D Cummins, 2,990-3,008 feet, 132 bbls. Texas Pacific Coal & Oil Co. No. 3 Thornberry, 2,800-3,073 feet, 1,084 bbls.

Yoakum County

Humble Oil & Refining Co. No. 1 Lynn, 4,860-5,095 feet, 516 bbls. Texas Co. No. 3 Willard, 4,923-5,085 feet. 688 bbls. Texas Pacific Coal & Oil Co. No. 6 Bennett, 5,075-5,275 feet, 1,604 bbls.

WEST CENTRAL TEXAS COMPLETIONS

Shackelford County

Charter Oil & Gas Co. No. 1 A. J. Swenson, 12 bbls. of oil, 2,500,000 feet of gas per day after 10-quart shot in sand at 1,568-80 feet. J. A. Jones No. 1 W. J. Dodson, dry at 720 feet, total depth. J. F. Baker No. 2 M. Davis, 5 bbls. of oil per day after 30-quart shot in sand at 1,559-64 feet, total depth 1,583 feet. Thomas Wittmer No. 1 H. A. Lones, 1,000,000 feet of gas per day in sand at 664-70 feet, total depth. (Pressure 270 pounds.)

Jones County

King Oil Co. No. 3 C. L. Carter, flowed 293 bbls. in nine hours after 40-quart shot in sand at 1,922-37 feet, total depth. Fain-McGaha and Sinclair Prairie No. 2 Mrs. Frances Olson, flowed 649 bbls. in eight hours from lime at 3,220-33 feet, total depth. Humble Oil & Refining No. 6 J. W. Hollums, flowed 530 bbls. in four hours from lime at 3,234-43 feet, total depth.

Throckmorton County

C. V. Welch No. 1 M. K. Graham, dry at 1,467 feet, total depth. Humble Oil & Refining No. 1-A Reynolds Cattle Co., dry at 3,895 feet, total depth.

Callahan County

E. H. Graves No. 1 P. G. Hatchett, dry at 428 feet. total depth.

PANHANDLE COMPLETIONS

(24-hour gauges)

Carson County

Sinclair Prairie No. 11 Cooper, 3,020-87 feet, 525 bbls. Texoma Natural Gas Co. No. 3-T Texas Co. fee, 2,495-2,749 feet, 11,300,000 feet of gas.

Gray County

Bradshaw Oil & Gas Co. No. 6 Arnold, 3,195-3,215 feet, 400 bbls. Magnolia Petroleum Co. No. 21 fee (227), 2,822-85 feet, 348 bbls. Sinclair Prairie No. 5 Harrah, 3,140-3,250 feet, 282 bbls.

Hutchinson County

Hobbs Oil Corp. No. 2 Hodges, 2,980-3,060 feet, 560 bbls.

Rocky Mountain Area

(Continued from Page 73)

bbls. per day. After acidizing with 750 gallons, it was reported making 300 bbls. per day.

Dr. B. A. S. Aronow No. 1 Government, SE SE SW section 18-35n-2w, was completed for 60 bbls. per day of fluid, with some water, from the contact at 1,643-44 feet, after acidizing with 500 gallons.

Two new operations were reported.

H. C. Morton No. 8 Morton, C SW NW sec. 24-34n-2w. Drlg. 570 ft.; (first report).
Big West Oil Co. No. 7 Gunderson, CWL NE NW sec. 19-35n-4w. Drlg. 740 ft.; (first report).
Chas. Grant et al No. 1 Anderson, SE NE NE sec. 26-35n-4w. T.D. 2,107 ft.; top Sunburst 1,847 ft.; may acid.
R. G. Parrent No. 1 Anderson, C SW SE sec. 26-35n-4w. T.D. 2,034 ft.; S.O. in lime break at 2,027-34 ft.; acid. 750 gals.
Superior Pet. Co. No. 7-A, NE NW NW sec. 12-35n-3w. T.D. 1,550 ft.; drlg. in cmt.; will run 5½-in. prod. string.
West Kevin Community Lease, Inc., No. 1 McClary, SW NE NW sec. 3-34n-4w. S.D. 1,550 ft.

Yellowstone County

Broadview Dome Oil Co. No. 1 Stallinberger, NE NE SW sec. 18-3n-23e. S.D. 4,565 ft.
Riverton Oil Co. No. 1 Fox, CEL NW NE sec. 14-2n-23e. T.D. 1,795 ft.; cmtd. 8¼-in. on bttm.; W.O.C.

UTAH

Grand County

Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22s-22e. T.D. 6,715 ft.
Columbia Crude Corp. No. 1 Rath, NW SW SE sec. 12-25s-20e. Drlg. 3,390 ft. in hd. salt.
Cane Creek Oil Co. No. 1 Govt., NW SW sec. 31-26n-21e. Drlg. 1,059 ft. in gr. L.; S.O.&G. in sd. at 945-49 ft.
Crescent Eagle Oil Co. No. 1, SW SE sec. 4-22s-21e. O.W.D.D.; old T.D. 4,006 ft.; R.U. to go to 6,000 ft.

Summit County

Longwell Pet. Co. No. 1, SE SW SE sec. 35-3n-5e. Drlg. 2,650 ft.

Increasing Difficulties Facing Companies Operating Abroad

The hardships under which American and British oil companies are compelled to operate in foreign countries are mounting rapidly. Labor troubles, government interference in the form of operating restrictions or almost intolerable tax burdens and social benefits required for native employes are the chief obstacles thrown in the path of profitable and peaceful exploration.

Three outbursts last week in widely scattered sections of the world are typical of the difficulties under which companies exploiting mineral resources of foreign countries are compelled to operate.

There was a labor riot in Caripito, Venezuela, near the nerve center of Standard Oil Co. of Venezuela operations in the eastern part of that country.

There was a strike in the Burmah oil fields.

There was a threatened increase in the production tax, wages and pension provisions and talk of revising terms of all concessions under which foreign companies are operating in Ecuador.

Foremost of the foreign disputes awaiting settlement is the wage controversy in Mexico. The question is pending decision from the Mexican supreme court.

The disturbance in Venezuela was the first reported since January, 1937, when a strike started in the Lake Maracaibo fields in the preceding December was settled under pressure from the national government. The riot culminated in the burning of 40 or more dwellings in Caripito, which is about midway between the Quiriquire field and the Standard Oil Co. of Venezuela docks on the San Juan River. It was reported inspired by labor agitators working in that section. Federal troops were called from Maturin and quelled the disturbance.

The general labor strike in Burmah is reported spreading, but has so far failed to effect a shutdown of essential operations. The strike originated in the Chauk field and has spread to the Yenangyaung field. It was precipitated by refusal of the operating company, Burmah Oil Co., to grant wage increases considered unreasonable.

In the Ecuadorian incident, the government's movement is directed against all foreign companies, outstanding of which are the American-owned South American Development Co., and the British-owned Anglo-Ecuadorian Oilfields, Ltd.

In his drive to increase government revenue, President Alberto Enrique of Ecuador has found less opposition to raising taxes against foreign companies and has pursued this course as the one of least resistance. The foreign-owned mining and petroleum companies have long paid the highest wages of any industries in Ecuador, but a recent order decreed payments must be increased from 10 to 15 per cent and pensions on full pay be accorded employes of 20 years' service.

It was understood that Anglo-Ecuadorean Oilfields, Ltd., had tentatively accepted the president's proposed increase of petroleum taxes, but doubtless will resist any changes in its concession contract with the government under which it holds operating title to producing oil lands. The company will also oppose any effort on the part of government to collect taxes at the increased rate for 15 years in advance as has been considered by the president.

Although the large companies have been enabled to adjust their fiscal policies from time to time and thus minimize the effect of regulatory decrees, the scope and frequency of new burdens is constantly increasing the cost of doing business abroad.

Of influence in the general trend is the drive for self-sufficiency in Germany and Italy, the gradual exclusion of all foreign companies in Argentina, storage requirements in France which constitute a burden on operating companies and the currency and permit restrictions prevailing in Rumania. Even in Venezuela where American companies probably have their greatest stake, the petroleum laws and more recent attitude of the government in demanding refinery construction contracts in return for prospective oil concessions are increasing the cost of doing business.

Colombia and Peru are so far comparatively open to the exercise of free administration over oil properties and regulations are comparatively few and light in comparison to countries like Mexico, for example.

In Argentina it is no longer possible or advisable to pursue an aggressive operating policy. The foreign companies with interests in the country are struggling to hold what they have and hoping for a break in the fiscal policy of the government. Under restrictions now existing, however, it is only a matter of time until producing properties held by Standard Oil Co. of Argentina and Royal Dutch-Shell subsidiaries and Texas Co. will be depleted. With every advantage obtainable under regulations which virtually constitute a monopoly in the matter of exploration, the Argentine government company, Y.P.F., is gradually solidifying its position to exclusion of all others.

Comparatively insignificant in itself is the case of Bolivia where properties of Standard Oil Co. of Bolivia were seized by the government and its concessions cancelled. Since seizure of the properties, Bolivia and Brazil have formed what appears to be the making of an alliance for exploration and exploitation of the former's oil lands.

Sac and Fox Field, After Years of Inactivity, Is Busy District

By DAL DALRYMPLE

After a lapse of nearly 12 years, the Sac and Fox district of eastern Lincoln County is making a successful bid for its place in the Oklahoma oil picture. Unheralded and unsung for more than a decade, the little Prue sand pool southwest of Stroud recently has become one of the more promising shallow areas in the state, with extensions and prospective extensions indicating a productive structure of considerable size.

The discovery well was completed in January, 1925, at Wilcox Oil & Gas Co. No. 1 Sac and Fox, SE SW SW section 15-14-6. It was a small Prue sand producer and, coming at a time when some of the more spectacular and deeper areas were being developed at Seminole and elsewhere in Oklahoma, it attracted little attention. The north offset was completed in November, 1925, and the south offset in June, 1926, for 15 and 20 bbls. daily from Prue sand at around 3,000 feet. The oil was 46 gravity.

The Wilcox company's lease on the Sac and Fox Indian land was for only 10 years, and in view of that time limit the operators did not feel justified in carrying on further development. No additional wells were drilled, but during the next 10 years the three original wells continued to produce, a production graph showing the yield during that period remained almost stationary at 1,000 bbls. a month. The production curve took its first swing upward when the fourth well was completed late in December, 1936, and has continued to soar with the completion of additional producers.

The well that started the revival was in NE NE SW section 15-14-6, on the Sac and Fox tract that had been leased anew by the Wilcox company at the expiration of the 10-year period. The new leases were for an indeterminate period, or as long as oil is produced. This justified revival of operations, and when the fourth well was completed as a Prue sand producer at 2,988 feet, total depth, for 30 bbls. of oil and 3,000,000 feet of gas daily, the signal to go ahead was given.

Since then some 20 producers have been drilled in the Sac and Fox area, with outposts being completed finding oil in sections 9, 10, 11 and 23-14-6, proving a wide area for development. Operators other than the Wilcox company who have production in the pool include Sinclair Prairie Oil Co., Helmerich & Payne, J. I. Doherty and others, Jones and others, Mudge Oil Co., Exchange Oil Co. and Mid-Continent Petroleum Corp. The big Wilcox lease block and other lease ownerships are shown on the map.

There is no indication as to where development will end, no failure having been recorded since the new work began. Dry holes shown on the map were drilled years ago and were not a part of the new play. Even if the pool should be limited to its present proven area, it is large enough to provide drilling activity for many months.

Indications are, however, that it will be extended well beyond the present limits. Extension of the producing area 2 miles to the west appears probable at Wilcox Oil & Gas Co. No. 1 Royer, SE SE NE section 18-14-6, despite unsatisfactory results so far. Possibility of an extension of more than 1 mile southwest also was seen at the company's outpost in SW SW NW section 21, where operators were setting casing at 3,087 feet.

The test on the Royer lease had Prue sand at 3,240-72 feet, with cores carrying thorough saturation. When the plug was drilled, however, water appeared with the oil to such an extent that completion was delayed. Operators believe the casing is split with water coming through the leak from behind pipe. They are attempting to run casing and set packer in an effort to shut off water, but had been unable to lower tubing below 500 feet off bottom when operations were temporarily suspended because the field was flooded following heavy rain. The pool is situated in a swampy, river-bottom area subject to overflow, necessitating almost complete cessation of activity in rainy weather. Because of rich saturation found in the Royer, comparing favorably with the best wells 2 miles eastward, operators are hopeful of completing it as a producer.

Steaming up at Sac and Fox

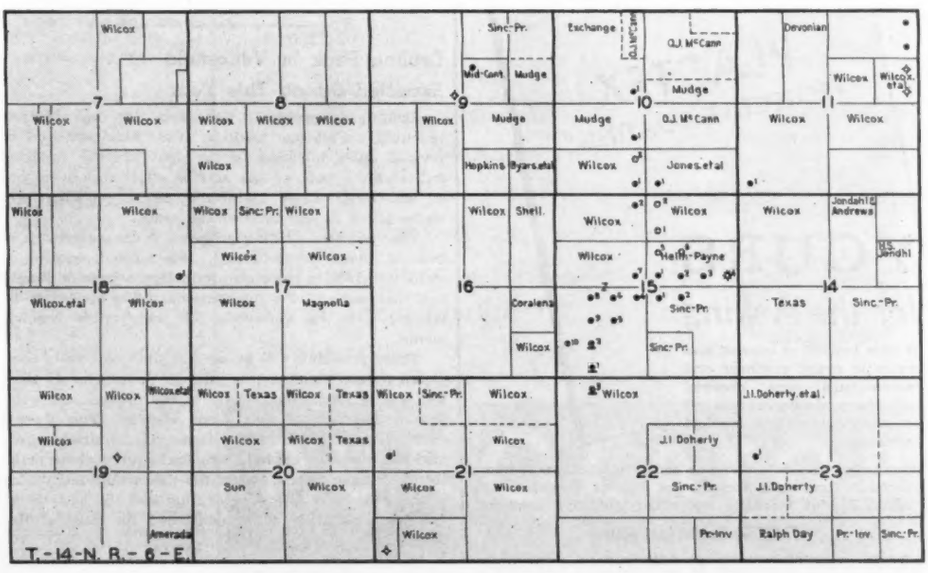
The Sac and Fox pool is located between and slightly south of the Stroud pool on the east and Davenport pool on the west.

The Stroud pool was opened by Union Petroleum Co. in section 2-14-6 late in 1923, the discovery being located on the west side of a closed surface anticline. It had Wilcox sand at 4,086-88 feet, with initial yield of 560 bbls. of 42-gravity oil. It started a drilling campaign which marked the introduction of rotary tools to Oklahoma. Initial production of subsequent wells at Stroud ranged from 50 to 2,500 bbls. daily. While the bulk of Stroud production was from Wilcox sand, the Prue sand found in that area at around 2,490 feet also carried oil.

The Davenport pool was discovered by Morgan & Flynn in September, 1924, at their No. 1 Smith in section 34-15-5. The discovery well had initial production of 220 bbls. of high-gravity oil from Prue sand at 3,416-45 feet. Development was rapid, with wells being completed for initial yield ranging from 15 to 1,100 bbls. daily. Early in 1926, Sinclair Prairie Oil Co. found production in Peru sand in the Davenport pool, the discovery well in that formation having initial yield of 300 bbls. of 51-gravity oil from play at 2,630-38 feet. Only a small area at Davenport was productive in Peru sand, bulk of the oil coming from the Prue formation.

Thus the depth of Prue sand dips from 2,490 feet at Stroud, downward to 3,000 feet at Sac and Fox, 3,250 feet in the Royer extension to the west, and 3,400 feet at Davenport.

The new wells at Sac and Fox have been averaging around 100 bbls. daily initial yield. One of the largest record producers was Wilcox No. 8 Sac and Fox, NE NW SW section 15-14-6, with initial production of 378 bbls. of oil from Prue sand topped at 2,921 feet, total depth 3,043 feet. A well that extended the pool northeastward in the direction of the Stroud pool was another recent completion, it being Wilcox No. 1 Lucan, SW cor. section 11-14-6, which had initial yield of 35 bbls. of oil daily through tubing from Prue sand topped at 2,882 feet, total depth 2,973 feet. One-half mile to the west of the Lucan, Wagoner & Jones No. 1 Wray, SW SW SE section 10-14-6, had Prue sand at 2,938



The revived Sac and Fox pool—original wells underlined

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feet, total depth 3,018 feet, and flowed 50 bbls. of 46.7-gravity oil in 24 hours. Wilcox No. 9 Sac and Fox, SE NW SW section 15, flowed 162 bbls. of oil initially from Prue sand at 2,927-3,011 feet; their No. 2 De Lozier, NE NE NW section 15-14-6, was a 50-bbl. well in Prue sand at 2,925-3,010 feet, and Mudge Oil Co. No. 1 Robertson, SE NE SW section 10-14-6, flowed 53 bbls. of oil initially from sand at 2,973 feet, total depth 3,054 feet. These wells, all recent completions, are indicative of results in the revived pool.

Cost of drilling Sac and Fox wells averages $20,000. Time required to complete a well ranges from three to four weeks. The oil is being run by Shell Pipe Line Co. and Tidal Pipe Line Co.

La.-Ark. Fields

(Continued from Page 65)

a ½-inch choke with tubing pressure of 50 pounds, casing pressure of 200 pounds, and total depth at 5,341 feet.

The Cotton Valley field of Webster Parish gained one new well in the deep Bodcaw sand. Magnolia Petroleum Co. No. 2 Crichton, section 33-21-10, made 981 bbls. per day of light oil through a 5/16-inch choke with an estimated 1,000,000 feet of gas. Tubing pressure was 700 pounds and casing pressure 1,600 pounds. Total depth is 5,776 feet. A number of other tests have cored the intermediate Holloway sand and are either testing it or coring deeper.

Estimated Daily Production

Estimated daily average production for the week ending April 2 follows:

NORTH LOUISIANA

	Bbls.
Bellevue	735
Caddo light	3,810
Caddo heavy	2,440
Converse	585
Cotton Valley heavy	85
Cotton Valley light	*8,235
De Soto and Red River	1,430
Elm Grove	390
Haynesville	2,915
Holly	80
Homer	2,560
Lisbon	10,280
Pleasant Hill	110
Rodessa	41,655
Sarepta-Carterville	200
Sligo	710
Sugar Creek	310
Urania	2,850
Zwolle	885
Total	80,265

SOUTH ARKANSAS

Buckner	200
Champagnolle	1,210
El Dorado	1,870
Lisbon	265
Miller County	400
Nevada	670
Rodessa	7,775
Shuler	21,005
Smackover light	2,040
Smackover heavy	15,900
Stephens	560
Troy	1,280
Urbana	1,225
Total	54,400

Texas side of Rodessa field 37,280 bbls. daily.
*4,550 bbls. is distillate.

Drilling Peak in Venezuela Expected During This Year

Drilling operations in Venezuela give indications of touching an all-time peak in 1938. New potential or proven areas included in the 1938 drilling program will claim a bulk of the activity, but work-over jobs in the older Lake Maracaibo fields probably will claim about 30 per cent of the work.

The indicated drilling program is the outgrowth of two or more developments, the normal decline of wells which have been on production a year or longer and that some of the international units appear to be leaning more on Venezuela for their crude requirements.

There probably will be no less than 600 wells completed or recompleted this year in Venezuela. At least 400 will be new wells mostly in the proven and semi-proven Lake Maracaibo Basin district. The Bachaquero district, south of Tia Juana, is definitely scheduled for intensive exploitation. Bachaquero alone probably will have 100 to 150 of the new wells. Lagunillas is also scheduled for more drilling and the activity at Tia Juana is likely to be continued for most of the year.

Mene Grande Oil Co., which negotiated with International Oil Co. January 1 for sale of its Venezuelan production in excess of its own requirements, will thus be enabled to continue its drilling activity in the competitive zones. Lack of sufficient outlet curtailed Mene Grande drilling in the Tia Juana field toward the end of 1937.

Although the secrecy surrounding eastern Venezuela wildcat exploration persists, there is assurance that much new drilling will be launched in that area. Indications are that perhaps 50 wells will be drilled in eastern Venezuela during 1938, exclusive of the Quiriquire, Pedernales and other proven fields. The estimate may easily prove inadequate if operators in that section, Mene Grande and Standard Oil Co. of Venezuela, arrange for transportation of production to the shipping ports.

Standard of Venezuela will shortly start its sixth well on acreage under development contract with Pantepec. The company is obligated to exercise its option at the middle of this year, if Standard of Venezuela is to continue exploration arrangement.

With the volume of new drilling in prospect, Venezuela production is expected to average in 1938 from 560,000 to 575,000 bbls. daily and may even exceed those figures.

Through Caribbean Petroleum, Venezuela Oil Concessions and Colon Development, the Royal Dutch-Shell group will continue its strong position, particularly in the Lake Maracaibo district and in other producing sections of western Venezuela. The company has one of the most ambitious drilling programs yet attempted in Venezuela projected for 1938 with concentration on the Lake Maracaibo section.

Behind the greater interest in Venezuela is the probability that the large international units cannot be certain of Mexican conditions. Companies with interests in both Mexico and Venezuela may be strengthening their positions in the latter country as protection against the day, should it come, when operations in Mexico will no longer be possible or profitable. It would be possible to replace much of the Mexican crude with oil from Venezuela without interrupting existing marketing conditions.

Second Wildcat to Be Drilled Soon in Switzerland

A second wildcat is planned to be started immediately in the Canton Vaud, Switzerland, in the region of Servion, some 8 miles southwest of Payerne and about 15 miles due east of the first well at Cuarny near Yverdon. The new location is based on the results obtained in that well and on further geological and geophysical investigations made during 1937. Rig and tools will be transported soon to the new location and the operation is to be financed exclusively with Dutch and Belgian capital.

According to the "Revue" of Lausanne, the well at Cuarny has recently been cemented and is being drilled out. This work will be completed early in March, when drilling will be resumed at the present depth of 4,170 feet.

Reported Oil Discovery in Egypt While Drilling for Water

Press dispatches from Cairo, Egypt, last week relating the discovery of oil near Mersah Matruh while drillers were attempting to develop a greater artesian water supply drew particular interest in the United States. Two of the largest companies in this country, Standard Oil Co. of New Jersey and Socony-Vacuum Oil Co., Inc., have been active for several months in pressing their applications for land in Egypt upon which to carry on oil exploratory work. No confirmation of the press reports had been received in New York oil offices at the end of the week but efforts were being made to establish the authenticity of the information.

Standard-Texas Test in Java Abandoned at 8,170 Feet

One of the deepest tests yet drilled in the Dutch East Indies has been abandoned as a dry hole on the western end of the Island of Java. The test was drilled to 8,170 feet by N. V. Nederlandsche Pacific Petroleum Maatschappij, which is jointly owned by the Texas Co. and Standard Oil Co. of California.

The company holds another concession in Java, which combined with that on which the failure was abandoned recently, totals 475,000 acres. The company also owns a concession in Sumatra covering an area of approximately 1,482,000 acres.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Apr. 2.—In North Turner Valley the proven crude area has been materially extended by successful completion of Royalite Oil Co. No. 29 Turner Basin, LSD 7, section 27-20-3w5. The well was finished at 6,920 feet after drilling 645 feet in the Madison limestone. Tubing was run and the hole cleared by gas lift, when it started to flow, ultimately reaching about 144 bbls. a day natural production. Production was a good grade of crude, though naphtha had been thought possible, as the location is only a quarter mile west of Foothills Oil & Gas Co. No. 1 naphtha producer. Acid treatment of Royalite No. 29 increased production to around 700 bbls. a day, and a good settled production is looked for.

Location of Royalite No. 29 is on the west flank of North Turner Valley close to the naphtha line. It is approximately 12½ miles north and west of Turner Valley Royalties No. 1, the original crude producer in the south end of the field, and about a mile north of Model Oils No. 1. The latter, finished in 1930 with around 100 bbls. of 70-gravity naphtha from the lime, later changing to crude with a peak production around 200 bbls. Production now after eight years is around 135 bbls. potential of 43-gravity crude. Royalite No. 29 started with a somewhat larger natural production.

Royalite No. 29 was started originally by Turner Basin Oil Co. and discontinued at 4,440 feet owing to faulted conditions encountered in other North Turner Valley wells. Last year drilling was resumed by Royalite Oil Co. Production at this point indicates that, while there is a faulted area north of the main crude production on the west flank of South Turner Valley, as indicated by the Brown Oil Corp. No. 3 duster in section 19-19-2w5, the west flank crude zone recurs north of the fault, and an extensive field may be developed on the west flank both north and south of Model No. 1 in LSD 8, section 22-120-3w5.

Royalite Oil Co. and Foothills Oil & Gas Co., both Imperial Oil subsidiaries, hold the three sections adjacent to Royalite No. 29, while Home Oil Co., Phillips Royalties and Model Oils, Ltd., also have extensive acreage on the North Turner Valley west flank. Home Oil Co. is starting a new test farther north, and Phillips Royalties is drilling to the south, while a number of new tests are likely to be started this spring.

West Flank Producers

In section 29-18-2w5, Sunburst Oil Co. No. 1, N half LSD 1, quit drilling at 7,157 feet after getting the black lime marker 452 feet in the Madison limestone. While clearing the hole it blew into production under heavy gas pressure. Natural flush production is estimated around 900 bbls. a day. Sunburst No. 1 was started by Sunburst Oil Co. on a 20-acre tract offsetting Model-Spooner-Reward No. 1 to the northwest; and was completed by British Trans-Canada Oils, Ltd.

In the same section, Davies Petroleums No. 1, LSD 2, immediately west of Sunburst No. 1, finished 477 feet in the Madison limestone at 7,375 feet. Tubing was run and gas lift used to clear the hole. It blew in with what looked like a large natural production, but later was disconnected for tubing adjustments. A good producer is expected.

In section 32-18-2w5, West Flank Oil Co. No. 1, S half LSD 1, has partially cleared the hole following a shot. Indications are that the natural production of 320 bbls. a day has increased to at least 400 bbls.

In section 20-18-2w5, Spy Hill Royalties No. 1, LSD 16, finished 488 feet in the Madison at 7,058 feet, cleaned out after a shot, and was given acid treatment. It is testing for potential. Gas flow was estimated 500,000 to 600,000 feet a day.

Tests in the Lime

In section 28-18-2w5, Richland Royalties No. 2, LSD 12, finished at 6,950 feet, 540 feet in the Madison. Tubing has been run and production test is being made, with indications of a good well.

In section 21-18-2w5, Brown Oil Corp. No. 4, LSD 4, is below 6,350 feet after getting the Madison limestone at 6,253 feet. Separator has been installed to handle production.

In section 32-18-2w5, West Turner Petroleums No. 1, LSD 2, got the Madison limestone at 6,832 feet and cemented 6-inch casing in the top of the lime at 6,850 feet. Location is 330 feet north of Commoil No. 1, the largest producer in the field. The Commoil well got the lime at 6,999 feet, indicating a dip of 167 feet between the two wells. West Turner No. 1 is being drilled by the Royalite Oil Co. on a 55 per cent participation basis.

West Side Drilling

In section 5-19-2w5, West Central Turner Valley, Vulcan-Brown Petroleums No. 1, LSD 10, is below 5,307 feet.

In section 6-19-2w5, East Crest Oil Co. No. 6, LSD 6, has spudded. Location is on Okalta acreage northwest of the west flank crude development.

In section 32-18-2w5, Royalite Oil Co. No. 30, LSD 11, is below 5,573 feet.

In section 29-18-2w5, Commoil No. 2, LSD 10, is moving in rotary outfit. Contract will be handled by Drilling Contractors, Ltd. Globe Royalties No. 1, LSD 7, is below 5,219 feet and logging closely with Commoil No. 1 producer to the north. Royalite Oil Co. No. 31, LSD 6, is below 2,380 feet. Model-Spooner-Reward No. 2, S half LSD 1, is below 5,780 feet after getting the McDougall-Segur sand at 5,555 feet.

In section 21-18-2w5, Barsac Royalties No. 1, LSD 12, offsetting Davies-Royalite No. 2 producer, is below 4,712 feet.

In section 20-18-2w5, Consolidated Royalties No. 1, LSD 14, is below 3,191 feet Producers Crude Corp. No. 1 (Intercity), LSD 11, is below 2,060 feet. Sunset Oils No. 2, LSD 7, is below 2,303 feet. York Oils No. 1, LSD 2, is fishing for lost bit at 3,415 feet. United-Brown Petroleums No. 5, LSD 1, is below 4,906 feet.

In section 17-8-2w5, Coronation Royalties No. 1, LSD 10, is below 3,905 feet. Royalite Oil Co. No. 32, LSD 8, has spudded and is below 203 feet with surface casing set. Sundance Royalties No. 1, LSD 9, is below 6,070 feet.

In section 16-18-2w5, Frontier Royalties No. 1, LSD 11, is below 3,800 feet. Royal Canadian Oil Co. No. 2, LSD 4, is below 790 feet. Okalta Oil Co. No. 7, LSD 3, is below 1,700 feet. Okalta No. 8, LSD 6, is below 1,200 feet.

In section 9-18-2w5, National Petroleum Corp. No. 2, LSD 14, is below 6,678 feet. Marine Petroleums No. 1, LSD 11, is working on cellar.

R. A. Brown, Sr., and associate interests will drill Mid-Royal Oils No. 2, LSD

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3, section 9-18-2w5, and are rigging up to resume from about 100 feet. The well has been standing since last fall. It was acquired by Bar Oils, Ltd., a Brown subsidiary, and will be handled either by Brown Oil Corp. or Producers Crude Corp. Location is south of the Highwood River and three-quarters of a mile south and 600 feet west of National Petroleum Corp. No. 2.

In section 33-17-2w5, Davies Petroleums No. 3, LSD 7, is below 2,300 feet.

In section 16-17-2w5, Firth Petroleums No. 1, LSD 6, has derrick up and is installing equipment. It will spud early in April, using heavy-duty cable tools. Location is 3 miles south of Davies No. 3 and over 6 miles south of the proven crude area.

Okalta Structure

On the Okalta structure, west of the field, Okalta Oil Co. No. 6, LSD 3, section 30-18-2w5, is below 5,700 feet.

North Turner Valley

In North Turner Valley, Phillips Royalties No. 1, LSD 16, section 16-20-3w5, is installing rotary equipment from Spy Hill Royalties No. 1, preparatory to resuming from 3,735 feet.

Home Oil Co. No. 2 Millarville, LSD 6, section 33-20-3w5, is working on derrick. Location is about a mile north and 1½ miles west of Royalite No. 29 producer.

New Potential Test Plan

Turner Valley producers have been notified by the Petroleum Producers Association of a new method adopted for determination of potential production of crude wells. New wells are to be given a preliminary test based upon the average of the first three days' production and thereafter will be operated on a temporary allowable for 27 days, the last 10 of which they must be operated continuously at not less than the set allowable. On the twenty-eighth day an unrestricted 24-hour production test will be made to determine potential.

All potentials are to be considered as two-thirds of production made during the 24-hour test; and no well, old or new, can be acidized within 10 days prior to the official test for potential.

The older wells are to be operated at not less than their allowable for a period of 10 days and on the eleventh day a 24-hour unrestricted test is to be made to determine potentials on the basis of two-thirds of production. Wells are to be operated continuously throughout the 10 days prior to the 24-hour test, and during it production may be as desired by the operator.

Tests are to be made by government officials every six months. The government is to be asked to require that all wells be tubed to insure maximum production efficiency.

Share Royalties Meeting

At the annual meeting of Share Royalties, Ltd., at Calgary the following officers were elected: President, Dr. Ray Neidig; vice president and managing director, Tom Campbell; secretary-treasurer, Thomas Humphries; directors, John Tully, George Ingraham, G. W. Dover. The company will secure a second government test of Share No. 1 producer in LSD 8, section 29-18-2w5, following which the well will be acidized or shot.

New Drilling Planned

Highwood-Sarcee Oils, Ltd., of Calgary which has two small naphtha producers on the east side of section 21-18-2w5, is planning active drilling operations this season in the west flank crude area.

Interests associated with Standard Oil Co. of California and Standard Oil Co. of British Columbia have acquired two blocks of acreage south of the proven Turner Valley field and in line with the potential crude development.

East Side Drilling

On the Aldersyde structure east of Turner Valley, Ranchmen's Oil Co. No. 1, LSD 16, section 13-20-29w4, is fishing lost cable and tools at 7,230 feet. Completion of the well is being handled by Anglo-Canadian Oil Co. of Calgary with Roy Widney in charge.

Pouce Coupe Drilling

On the Pouce Coupe structure in the northern Alberta foothills west of Peace River, Batcheller Syndicate No. 1, section 24-79-12w6, is below 650 feet and expected to get the St. John oil sands around 900 to 1,000 feet. In this horizon Northwest Co. No. 1, drilled some years ago in the Pouce Coupe river valley, encountered oil and gas at shallow depth, but it was considered an edge well and the showings were cased off for deeper drilling. Batcheller No. 1 is on Henderson Creek, a tributary of the Pouce Coupe River, and east and south of the Northwest company well. It is expected to get the St. John sands at a high point on the structure. The potential oil horizon is a coarse-grained sandstone 40 feet thick. The Batcheller syndicate holds a block of 25,000 acres. Western Securities, Ltd., has arranged for development of adjacent holdings of more than 50,000 acres.

Tests in the Foothills

On the Brazeau structure in the foothills west of Edmonton, Home Oil Co. No. 1 Brazeau, LSD 16, section 7-43-17w5, is below 2,420 feet.

On the Hunter Valley structure in the Forest Reserve area west of Olds, Hunter Valley Oil Co. No. 1 McLaren, LSD 12, section 13-31-10w5, is being abandoned after drilling to 8,282 feet, where a production test showed only some non-inflammable gas. Hunter Valley No. 2 wil be located on the basis of information secured in drilling No. 1, and will probably be started early this season.

On the Highwood-Sinclair structure southwest of Turner Valley, Green Valley Oils No. 1 Banner, LSD 6, section 34-17-3w5, is standing at 5,797 feet, and waiting for boiler repairs to lift the lost tools. The hole is in the lime, with fair shows of light crude.

Border Fields

In the Taber field, southern Alberta, Plains Petroleum Corp. No. 2, LSD 11, section 25-9-17w4, has commenced shipments of crude to the Imperial Oil refinery at Regina, Saskatchewan. Crude is being taken from 2,000 bbls. in storage, being trucked from the well to Taber, and there loaded into tank cars. Plains No. 1 has an estimated pumping production of 120 bbls. a day of 27-gravity crude. Plains No. 4, LSD 15, section 25-9-17w4, is working on derrick. Plains No. 5, LSD 2, section 36-9-17w4, will be started after No. 4 is spudded.

North Taber Exploration Co. of Vancouver, British Columbia, has located No. 1 in LSD 7, section 10-11-15w4, following completion of extensive core-drilling. Work is under supervision of Harry M. B. Inglis, geologist.

South of Magrath, Lyons-McIntyre No. 1, LSD 14, section 19-3-21w4, is below 3,100 feet.

S. Myron Zandmer and associates of Los Angeles and Seattle are reported to have taken over extensive holdings of

(Continued on Page 98)

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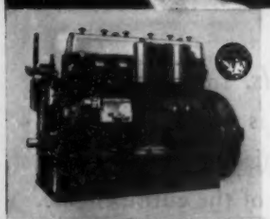

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WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S. T. R.	Depth	Status
Wilshire Oil, No. 1 Gaviota, Santa Barbara	35- 5-33	3,075	fish D.P.
Hancock-Bush, No. 3 Brown, Santa Maria, S. Barbara	25-10-34	4,273	flow 1,600 b.d.
Palm Oil, No. 1 Bill, Santa Maria, Santa Barbara	27-10-34	3,951	sd. sh. drlg.
Cal. Lands, No. 3 Gallison, Santa Maria, S. Barbara	26-10-34	5,515	pump 672 b.d.
Cal. Lands, No. 4 Gallison, Santa Maria, S. Barbara	26-10-34	2,891	sd. sh. drlg.
Cal. Lands, No. 1 Macdonald, Santa Maria, S. Barbara	28-10-34	3,493	sd. sh. drlg.
Moore, E. H., No. 1-H Sugar, Santa Maria, S. Barbara	19-10-34	4,898	sd. sh. drlg.
Pet. Sec., No. 1 Carey, Santa Maria, Santa Barbara	27-10-34	5,320	sd. sh. drlg.
Signal Oil, No. 3 Romalho, Santa Maria, S. Barbara	27-10-34	4,788	br. sh. drlg.
Union Oil, No. 1 Stinson, Santa Maria, Santa Barbara	28-10-34	1,998	sd. sh. drlg.
Union Oil, No. 1-19 Enos, Santa Maria, S. Barbara	19-10-33	2,796	cleaning out
Union Oil, No. 3 Le Roy, Santa Maria, Santa Barbara	24-10-35	758	sd. sh. drlg.
Union Oil, No. 2-1-0 Santa Maria, Santa Barbara	21-10-34	5,326	sd. sh. drlg.
Union Oil, No. 1 Silva, Santa Maria, Santa Barbara	24-10-35	4,961	sd. sh. drlg.
Pet. Equities, No. 1 Webber, Santa Maria, S. Barbara	27-10-34	4,318	br. sh. drlg.
Valoco Oil, No. 1 Boyd, Santa Maria, Santa Barbara	28-10-34	1,996	sd. sh. drlg.
Wilson Oil, No. 1-B Santa Maria, Santa Barbara	26-10-34	4,876	sd. sh. drlg.
Bay City Oil, No. 1-M Santa Maria, Santa Barbara	27-10-34	3,991	br. sh. drlg.
Pac. West. Oil, No. 3-S Santa Maria, Santa Barbara	27-10-34	4,904	sd. sh. drlg.
Pima Drlg., No. 1 Morganti, Casmalia, Santa Barbara	13- 9-35	1,777	pump 50 b.d.
Standard Oil, No. 1 Cat Canyon, Santa Barbara	27- 9-33	5,529	redrlg. 3,130
Bell, A. E., No. 4 York, Lompoc, Santa Barbara	33- 8-34	2,760	pump 25 b.d.
Fisher, D., No. 1 Cuyama, Santa Barbara	28-11-28	1,296	sd. sh. drlg.
Carpinteria Oil, No. 1 Carpinteria, Santa Barbara	32- 4-25	1,990	sd. sh. drlg.
Gauthier Oil, No. 1 Summerland, Santa Barbara	22- 4-26	1,465	sd. sh. drlg.
Rowe, W. G., No. 1 Johnson, Oxnard, Ventura	15- 1-22	4,115	hole cored in
Texas Co., No. 5 Yale, South Mountain, Ventura	13- 3-21	3,098	sd. sh. drlg.
Texas Co., No. 1 Edwards, Camarillo, Ventura	19- 2-21	6,111	fish D.P.
C. C. M. Oil, No. 19 Hobson, Rincon, Ventura	17- 3-24	4,022	br. sh. drlg.
C. C. M. Oil, No. 20 Hobson, Rincon, Ventura	8- 3-24	4,670	O. S. drlg.
C. C. M. Oil, No. 22 Hobson, Rincon, Ventura	17- 3-24	2,680	sd. sh. drlg.
Richfield Oil, No. 6-F Rincon, Ventura	17- 3-24	2,580	cmtd. 2,548
Tide Water A. O., No. 19 V.L.W., Ventura, Ventura	26- 3-23	7,785	hd. sd. drlg.
Tide Water A. O., No. 41 V.L.W., Ventura, Ventura	24- 3-23	7,305	water witch
Tide Water A. O., No. 68 Lloyd, Ventura, Ventura	27- 3-23	3,298	sd. sh. drlg.
Tide Water A. O., No. 69 Lloyd, Ventura, Ventura	27- 3-23	7,179	sd. sh. drlg.
Tide Water A. O., No. 135 Lloyd, Ventura, Ventura	27- 3-23	9,796	sd. sh. drlg.
Tide Water A. O., No. 138 Lloyd, Ventura, Ventura	23- 3-23	9,498	O.S. drlg.
Tide Water A. O., No. 18 Hartman, Ventura, Ventura	22- 3-23	10,591	sd. sh. drlg.
Tide Water A.O., No. 11 McGonigle, Ventura, Ventura	23- 3-23	1,972	sd. sh. drlg.
Shell Oil, No. 94 Taylor, Ventura Ave., Ventura	20- 3-23	4,941	sd. sh. drlg.
General Pet., No. 13 Notten, Ventura Ave., Ventura	28- 3-23	9,871	P.B. 9,451
Amerada Pet., No. 5 Beer, Devils Den, Kern	22-26-19	7,351	br. sh. drlg.
H. L. F. Oil., No. 1 Devils Den, Kern	25-25-18	151	sd. sh. drlg.
Gibson Oil, No. 3 Alferitz, Devils Den, Kern	14-25-18	157	idle
Par-Mer Oil, No. 1 McKittrick, Kern	6-31-22	2,674	sd. sh. drlg.
Rocima Oil, No. 1 Laymance, McKittrick, Kern	20-30-22	1,427	bailed dry
Austin, John W., No. 1 Hampshire, McKittrick, Kern	26-30-22	980	bailed dry
Standard Oil, No. 2 Randolph, Semi-Tropic, Kern	14-27-23	7,620	rig compressor
Continental Oil, No. 2 KCL, Wasco, Kern	8-27-24	14,810	sd. sh. drlg.
Chico-Martinez Oil, No. 1 South Belridge, Kern	1-29-20	1,050	bailing
Ohio Oil, No. 1 Ford, South Belridge, Kern	6-29-22	3,798	sd. sh. drlg.
Texas Co., No. 2-23-Theta, Lost Hills, Kern	2-26-20	1,825	wet; abd.
Standard Oil, No. 7 United, Lost Hills, Kern	2-26-20	1,553	sd. sh. drlg.
Tide Water, A. O., No. 10-B Williamson, L. Hills, Kern	11-26-20	1,340	P.B. 1,327
Tide Water, A. O., No. 1 Elliott, Lost Hills, Kern	11-26-20	1,222	will deepen
Argo Pet., No. 1 Farnsworth, Lost Hills, Kern	11-26-20	1,291	cleaning out
Shell Oil Co., No. 1 Voight, Belridge, Kern	32-27-20	3,498	sd. sh. drlg.
Belridge Oil, No. 27-5 North Belridge, Kern	27-27-20	2,536	sd. sh. drlg.
Belridge Oil, No. 27-6 North Belridge, Kern	27-27-20	5,971	sd. sh. drlg.
Belridge Oil, No. 35-26 North Belridge, Kern	35-27-20	5,172	sd. sh. drlg.
Tide Water A. O., No. 1-21 North Belridge, Kern	21-27-20	8,640	acidizing
Tide Water A. O., No. 3-21 North Belridge, Kern	21-27-20	2,450	sd. sh. drlg.
Richfield Oil, No. 1-A North Belridge, Kern	22-27-20	8,521	O.S. drlg.
Richfield Oil, No. 2 North Belridge, Kern	22-27-20	3,995	sd. sh. drlg.
Texas Co., No. 3 Martin, North Belridge, Kern	22-27-20	7,580	br. sh. drlg.
General Pet., No. 1 St. Helens, Belridge, Kern	12-28-20	8,685	hd. sd. drlg.
Coast Expl., No. 1 Coffee, Round Mountain, Kern	6-28-29	1,982	tested wet
Cal-Western Oil, No. 11 Round Mountain, Kern	12-28-28	1,855	sd. sh. drlg.
Long, Harry, No. 2 Willis, Round Mountain, Kern	2-28-28	2,101	gr. sd. drlg.
Shell Oil, No. 5-1 Olcese, Round Mountain, Kern	22-28-29	2,025	gr. sd. drlg.
Kern River Oilfields, No. 25-1-C Kern Front, Kern	25-28-27	2,007	P.B. 1,794
Rubenstein, A. B., No. 1 Lerdo, Kern	20-28-27	3,369	P.B. 3,302
Helm & Smith, No. 2-A Kernco, Kern River, Kern	34-28-28	652	O.S. drlg.
Carter, J. P., No. 2 S. P. L. Mount Poso, Kern	3-27-28	1,473	recmtd. 1,462
Bargol Oil, No. 2 Claflin, Mount Poso, Kern	10-27-27	2,067	br. sh. drlg.
Framac Oil, No. 3 Brown, Mount Poso, Kern	22-27-27	1,351	cmtd. 1,340
Crestmont Oil, No. 1 Glide, Mount Poso, Kern	19-26-28	876	sd. sh. drlg.
Pacific Oil & Gas, No. 2 Guisti, Fruitvale, Kern	14-29-27	2,896	sd. sh. drlg.
Wood Callahan Oil, No. 21-2 Edison, Kern	21-30-29	3,675	P.B. 3,145
Wood Callahan Oil., No. 1 Porter, Edison, Kern	20-30-29	4,187	gr. sd. drlg.
Union Oil, No. 1 Berry, Arvin, Kern	15-31-29	5,995	sd. sh. drlg.
Superior Oil, No. 2 Wagner, Rio Bravo, Kern	35-28-25	11,097	br. sh. drlg.
Superior Oil Co., No. 3 Wagner, Rio Bravo, Kern	35-28-25	3,384	sd. sh. drlg.
Superior Oil, No. 1 Geissinger, Rio Bravo, Kern	32-38-25	11,248	O.S. drlg.
Superior Oil, No. 1 Ruhl, Rio Bravo, Kern	1-29-25	11,230	sd. sh. drlg.
Union Oil, No. 2-34 KCL, Rio Bravo, Kern	34-28-25	11,205	cmtd. 11,200
Getty Oil, No. 1 Ramsey, Rio Bravo, Kern	35-28-25	11,084	sd. sh. drlg.
General Pet., No. 1 Wagoner, Rio Bravo, Kern	35-28-25	9,591	sd. sh. drlg.
General Pet., No. 2 Wagoner, Rio Bravo, Kern	35-28-25	3,980	sd. sh. drlg.
Standard Oil, No. 18-1 KCL, Una, Kern	29-28-26	6,190	sd. sh. drlg.
Dilmar Oil, No. 1 Quinn, Jasmin, Kern	15-25-27	2,956	will deepen
Shell Oil, No. 58-A KCL, Bellevue, Kern	29-29-27	6,930	gr. sd. drlg.
Continental Oil, No. 1-D KCL, Greeley, Kern	10-30-26	8,472	dry; abd.
Standard Oil, No. 2 Fleishauer, Greeley, Kern	20-29-26	8,148	dry; abd.
Standard Oil, No. 11-2 KCL, Greeley, Kern	20-29-26	10,398	gr. sh. drlg.
Standard Oil, No. 11-13 KCL, Greeley, Kern	20-29-26	7,756	O.S. drlg.
Standard Oil, No. 11-14 KCL, Greeley, Kern	18-29-26	6,380	sd. sh. drlg.
Standard Oil, No. 1 Ross, Greeley, Kern	20-29-26	5,290	sd. sh. drlg.
Shell Oil, No. 76-1-B KCL, Greeley, Kern	16-29-26	6,970	sd. sh. drlg.
Shell Oil, No. 41-29-A KCL, Ten Section, Kern	29-30-26	7,160	sd. sh. drlg.
Shell Oil, No. 34-30-A KCL, Ten Section, Kern	30-30-26	1,996	sd. sh. drlg.
Shell Oil, No. 25-30-B, KCL, Ten Section, Kern	30-30-26	6,580	sd. sh. drlg.
Shell Oil, No. 81-31-B, Ten Section, Kern	31-30-26	8,250	sd. sh. drlg.
Shell Oil, No. 2-13-A KCL, Canal, Kern	13-30-25	8,072	sd. sh. drlg.
Shell Oil, No. 81-14-A KCL, Canal, Kern	14-30-25	2,591	sd. sh. drlg.
Ohio Oil, No. 5-E Canal, Kern	14-30-25	8,075	gr. sh. drlg.
Ohio Oil, No. 8-A KCL, Buena Vista, Lake, Kern	32-31-26	9,197	sd. sh. drlg.
Richfield Oil, No. 1 M.C. Midway-Sunset, Kern	24-31-22	2,560	bailing
C. C. M. Oil, No. 4 Tumbador, Midway-Sunset, Kern	24-31-22	2,430	pump 15 b.d.
Berry Oil, No. 22 Midway-Sunset, Kern	28-12-24	1,140	bailing
Victor Oil, No. 14 Midway-Sunset, Kern	35-32-23	3,320	P.B. 3,150
National Oil, No. 17 Midway-Sunset, Kern	35-32-23	2,245	hd. sd. drlg.
Texas Co., No. 1 Pioneer, Midway-Sunset, Kern	33-11-23	7,799	br. sh. drlg.
Abbott, F. E., No. 12 Lewis, Sunset, Kern	20-11-23	2,662	br. sd. drlg.
Universal Cons'd, No. 1 Tejon, Kern	33-11-19	4,634	P.B. 4,565
Shell Oil, No. 4-26 KCL, San Edmidio, Kern	26-11-22	8,052	sd. sh. drlg.
Richfield Oil, No. 1 Wheeler Ridge, Kern	28-11-20	1,965	sd. sh. drlg.
Pure Oil, No. 1 SPL, Cantua, Fresno	31-18-18	10,862	D.P. struck
Pet. Sec., No. 2 Gatchell, Jacalitos, Fresno	18-20-16	6,830	gr. sh. drlg.
Shell Oil, No. 36-1 Italo, Coalinga, Fresno	36-19-14	3,196	idle
Shell Oil, No. 35-1 Coalinga, Fresno	36-19-14	963	sd. sh. drlg.
K. N. D. A., No. 67-20-J Kettleman North, Fresno	20-21-17	10,251	hd. sd. drlg.
K. N. D. A., No. 72-4-P Kettleman North, Fresno	4-22-17	8,465	hd. sh. drlg.
K. N. D. A., No. 6-6-Q Kettleman North, Kings	6-22-18	8,189	idle
K. N. D. A., No. 6-8-Q Kettleman North, Kings	8-22-18	6,960	sd. sh. drlg.
K. N. D. A., No. 38-8-Q Kettleman North, Kings	8-22-18	6,498	br. sh. drlg.
K. N. D. A., No. 27-16-Q Kettleman North, Kings	16-22-18	1,891	sd. sh. drlg.
K. N. D. A., No. 58-16-Q Kettleman North, Kings	16-22-18	5,587	hd. sh. drlg.
K. N. D. A., No. 47-18-Q Kettleman North, Kings	18-22-18	7,371	gr. sd. drlg.
K. N. D. A., No. 43-20-Q Kettleman North, Kings	20-22-18	5,184	sd. sh. drlg.
Standard Oil, No. 46-13-H Kettleman North, Fresno	14-21-16	9,597	will deepen
Standard Oil, No. 27-21-J Kettleman North, Fresno	21-21-17	10,735	cmtd. 10,715
Standard Oil, No. 58-33-J Kettleman North, Fresno	33-21-17	6,795	br. sh drlg.
Standard Oil, No. 2-11-P Kettleman North, Kings	11-22-17	7,850	will deepen
Standard Oil, No. 87-1-P Kettleman North, Kings	1-22-17	7,050	br. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St. sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting for cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Standard Oil, No. 21-13-P Kettleman North, Kings ..	13-22-17	7,248	fish D.P.
Standard Oil, No. 41-7-Q Kettleman North, Kings ..	7-22-18	7,860	gr. sd. drlg.
Standard Oil, No. 74-7-Q Kettleman North, Kings ..	7-22-18	4,384	sd. sh. drlg.
Standard Oil, No. 85-7-Q Kettleman North, Kings ..	7-22-18	6,250	br. sh. drlg.
Bandini Pet., No. 5 Whepley, Kettleman N., Fresno	35-21-17	9,515	idle
Pyramid Prod., No. 1 Kettleman Plains, Kings ..	27-24-18	3,088	idle
Standard Oil, No. 2 Weyl, McDonald Is., S. Joaquin	25- 2- 4	5,279	24,860 m.c.f.
Turner, L. E., No. 1 Glaze, Pixley, Tulare	15-22-26	2,802	cmtd. 2,775
Wilshire Oil, No. 1 Cowell, Half Moon Bay, San Matio	20- 6- 5	8,030	P.B. 2,525
Amerada Pet., No. 1 Mayhood, Rio Vista, Solano ..	36- 4- 2	3,900	cmtd. 3,928

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S. T. R.	Depth	Status
Sovereign Oil, No. 1 El Segundo, Los Angeles	12- 3-15	7,354	completing
Termo Co., No. 2 El Segundo, Los Angeles	12- 3-15	7,400	rig to pump
Rolling Hills Pet., No. 1 Palos Verdes, Los Angeles .	27- 2-14	4,218	cleaning out
Patton, C. B., No. 1 Meacham, Torrance, Los Angeles	15- 4-14	5,032	P.B. 4,977
Patton, C. B., No. 2 Neil, Torrance, Los Angeles ..	14- 4-14	5,016	sd. sh. drlg.
McCaslin, W. E., No. 2 Hutchins, Torrance, L. A. ...	14- 4-14	5,014	sd. sh. drlg.
Torrance Oil, No. 1 Grubb, Torrance, Los Angeles ..	14- 4-14	3,960	sd. sh. drlg.
Sol Oil, No. 1 Torrance, Torrance, Los Angeles	23- 4-14	3,825	redrlg. 3,198
Andrews & Mitchell, No. 5 Kirk, Torrance, L. A. ..	23- 4-14	3,788	fish liner
Anderson, N. H., No. 2 Torrance, Los Angeles	14- 4-14	5,051	will P.B.
McDonald & Burns, No. 3 Moore, Torrance, L. A. ..	23- 4-14	3,871	sd. sh. drlg.
Emerald Oil, No. 1 Fee, Torrance, Los Angeles	23- 4-14	5,120	cleaning out
Camp, C. W., No. 12 Torrance, Los Angeles	23- 4-14	3,780	cleaning out
Doyle Pet., No. 1 Bond, Torrance, Los Angeles ..	23- 4-14	5,098	sd. sh. drlg.
Doyle Pet., No. 2 Neill, Torrance, Los Angeles	14- 4-14	4,999	sd. sh. drlg.
Doyle Pet., No. 3 Getty, Torrance, Los Angeles	14- 4-14	3,780	pipe bad
Elyod Oil, No. 1 Post, Torrance, Los Angeles	14- 4-14	3,774	redrlg. 1,941
Peso Oil, No. 1 Marcoux, Torrance, Los Anegeles ..	23- 4-14	4,198	sd. sh. drlg.
Kelly, F. C., No. 1 Huyck, Torrance, Los Angeles ..	14- 4-14	3,762	cleaning out
Williams & Co., No. 1 Torrance, Los Anegels	14- 4-14	3,795	redrlg. 3,630
Woolner Oil, No. 1 Torrance, Los Angeles	14- 4-14	3,780	redrlg. 3,515
Krause & Baker, No. 2 Gladys, Torrance, Los Angeles	14- 4-14	3,795	rigged up
Peters Royalty, No. 1 Torrance, Los Angeles	14- 4-14	3,788	rigging up
Pilgrim Oil, No. 1 P. & O., Torrance, Los Angeles ..	14- 4-14	3,800	redrlg. 3,596
Pilgrim Oil, No. 2 Getty, Torrance, Los Angeles ..	23- 4-14	3,780	will deepen
Sierra Dev. No. 2 Weiller, Torrance, Los Angeles ..	14- 4-14	3,560	cleaning out
Texas Co., No. 5 Redondo, Torrance, Los Angeles ..	15- 4-14	3,797	reaming
Texas Co., No. 3 Wilson, Torrance, Los Angeles	15- 4-14	4,966	sd. sh. drlg.
Wilson, R. K., No. 1 Cook, Torrance, Los Angeles ..	14- 4-14	3,770	cleaning out
South. Cal. Drlg., No. 1 Hough, Torrance, L. A. ..	14- 4-14	3,780	will deepen
Standard Oil, No. 1 Martin, Torrance, Los Angeles ..	15- 4-14	3,759	cleaning out
Superior Oil, No. 5 Torrance, Los Angeles	16- 4-14	4,959	pump 225 b.d.
Imperial Gypsum, No. 1-C Torrance, Los Angeles ..	14- 4-14	3,750	milling 760
Imperial Gypsum, No. 2 Getty, Torrance, Los Angeles	14- 4-14	3,785	idle
Lakeside Oil, No. 1 Cook, Torrance, Los Angeles ..	14- 4-14	4,998	sd. sh. drlg.
Coast Line Oil, No. 1 McBride, Torrance, Los Angeles	14- 4-14	5,006	sd. sh. drlg.
C. C. M. O., No. 14 Torrance, Los Angeles	14- 4-14	4,582	hd. sh. drlg.
C. C. M. O., No. 23 Torrance, Los Angeles	14- 4-14	3,770	mill 3,530
Fisher, N., No. 1 Washburn, Torrance, Los Angeles	23- 4-14	5,147	casing leak
Berken Oil, No. 1 Star, Torrance, Los Angeles	16- 4-14	3,758	rigged up
Shell Oil, No. 94 Reyes, Dominguez, Los Angeles ..	33- 3-13	5,862	sd. sh. drlg.
Union Oil, No. 58 Callender, Dominguez, Los Angeles	33- 3-13	7,540	sd. sh. drlg.
Union Oil, No. 59 Callendar, Dominguez, Los Angeles	33- 3-13	6,306	sd. sh. drlg.
Union Oil, No. 60 Callendar, Dominguez, Los Angeles	33- 3-13	6,569	sd. sh. drlg.
Barnsdall Oil, No. 20 O'Dea, Rosecrans, Los Angeles	18- 3-13	7,373	sd. sh. drlg.
Universal Cons'd., No. 2 Trust, Rosecrans, L. Angeles	18- 3-13	7,601	O.S. drlg.
Woodward, J., No. 1 Gordon, Rosecrans, Los Angeles	18- 3-13	6,596	cleaning out
Barnsdall Oil, No. 3 S. F., Newhall, Los Angeles ..	26- 4-17	2,080	sd. sh. drlg.
West Coast Dev., No. 2 Broughton, Newhall, L. A.	27- 4-16	1,680	deepening
General Pet., No. 33 Ford, Wilmington, Los Angeles	4- 5-13	2,526	sd. sh. drlg.
General Pet., No. 36 Ford, Wilmington, Los Angeles	4- 5-13	3,000	flow 280 b.d.
General Pet., No. 39 Ford, Wilmington, Los Angeles	4- 5-13	4,101	flow 1,605 b.d
General Pet., No. 3-1 C. C., Wilmington, Los Angeles	4- 5-13	3,165	flow 175 b.d.
General Pet., No. 3 Harbor, Wilmington, Los Angeles	2- 5-13	1,896	sd. sh. drlg.
General Pet., No. 10 Harbor, Wilmington, L. Angeles	2- 5-13	2,450	sd. sh drlg.
General Pet., No. 11 Harbor, Wilmington, L. Angeles	2- 5-13	2,436	sd. sh. drlg.
General Pet., No. 15 Harbor, Wilmington, L. Angeles	2- 5-13	3,343	O.S. drlg.
General Pet., No. 6-S.P., Wilmington, Los Angeles	2- 5-13	1,987	sd. sh. drlg.
Allied Pet., No. 27 Wilmington, Los Angeles	2- 5-13	2,996	flow 362 b.d.
Bankline Oil, No. 3-U.P., Wilmington, Los Angeles .	3- 5-13	3,895	O.S. drlg.
Bankline Oil, No. 6-U.P., Wilmington, Los Angeles .	2- 5-13	2,595	sd. sh. drlg.
Baker Oil, No. 1 Wilmington, Los Angeles	35- 4-13	3,078	cmtd. 3,077
Caleb Pet., No. 1 F. H. Wilmington, Los Angeles ..	32- 4-13	2,198	sd. sh. drlg.
Dunlap Oil, No. 11 Wilmington, Los Angeles	2- 5-13	3,776	O.S. drlg.
Hogan Pet., No. 1 Graham, Wilmington, Los Angeles	2- 5-13	3,824	O.S. drlg.
Hancock Oil, No. 5-A Wilmington, Los Angeles	3- 5-13	4,047	O.S. drlg.
Hancock Oil, No. 14-A Wilmington, Los Angeles	3- 5-13	1,890	sd. sh. drlg.
Hancock Oil, No. 9-B Wilmington, Los Angeles	2- 5-13	2,600	sd. sh. drlg.
Hancock Oil, No. 8-F Wilmington, Los Angeles	2- 5-13	2,050	sd. sh. drlg.
Kreiger Oil, No. 2 K.W., Wilmington, Los Angeles	32- 4-13	3,210	O.S. drlg.
Michelin, Jas., No. 1 Com., Wilmington, Los Angeles	33- 4-13	1,996	sd. sh. drlg.
Richfield Oil, No. 1-G Wilmington, Los Angeles ..	2- 5-13	6,078	P.B. 2,970
Richfield Oil, No. 1-P.G., Wilmington, Los Angeles	2- 5-13	2,394	sd. sh. drlg.
Richfield Oil, No. 4-P.G., Wilmington, Los Angeles	2- 5-13	3,330	O.S. drlg.
Richfield Oil, No. 1-W.E., Wilmington, Los Angeles	2- 5-13	3,334	O.S. drlg.
Royalty Service, No. 6 Nelson, Wilmington, L. A. ..	33- 4-13	5,350	sd. sh. drlg.
Superior Oil, No. 1 Seaside, Wilmington, Los Angeles	4- 5-13	2,916	flow 575 b.d.
Superior Oil, No. 4-C Seaside, Wilmington, L. Angeles	4- 5-13	1,984	sd. sh. drlg.
Superior Oil, No. 2 Ocean Front, Wilmington, L. A.	2- 5-13	3,241	flow 670 b.d.
Superior Oil, No. 1 Leonard, Wilmington, Los Angeles	2- 5-13	2,297	sd. sh. drlg.
Texas Co., No. 3 Ref., Wilmington, Los Angeles ..	34- 4-13	1,941	sd. sh. drlg.
Termo Co., No. 1-D Wilmington, Los Angeles	3- 5-13	3,905	O.S. drlg.
Termo Co., No. 2-D Wilmington, Los Angeles	3- 5-13	3,900	O.S. drlg.
Union Pacific R.R., No. 50 Wilmington, Los Angeles	34- 4-13	2,870	O.S. drlg.
Union Pacific R.R., No. 70 Wilmington, Los Angeles	34- 4-13	4,025	flow 1,510 b.d.
Union Pacific R.R., No. 71 Wilmington, Los Angeles	34- 4-13	4,045	flow 5,040 b.d.
Union Pacific R.R., No. 72 Wilmington, Los Angeles	34- 4-13	3,984	O.S. drlg.
Union Pacific R.R., No. 81 Wilmington, Los Angeles	4- 5-13	1,892	sd. sh. drlg.
Union Pacific R.R., No. 83 Wilmington, Los Angeles	3- 5-13	2,596	O.S. drlg.
Union Pacific R.R., No. 3-E Wilmington, Los Angeles	3- 5-13	1,865	sd. sh. drlg.
Union Pacific R.R., No. 5-E Wilmington, Los Angeles	3- 5-13	1,973	sd. sh. drlg.
Johnston Drlg., No. 1 Pico, Montebello, Los Angeles	5- 2-11	4,380	sd. sh. drlg.
St. Helens Pet., No. 24-M, Montebello, Los Angeles	2- 2-12	5,760	sd. sh. drlg.
St. Helens Pet., No. 25-M, Montebello, Los Angeles	2- 2-12	4,581	sd. sh. drlg.
St. Helens Pet., No. 26-M, Montebello, Los Angeles	2- 2-12	2,790	sd. sh. drlg.
Union Oil., No. 1 Paul Howard, Montebello, L. A. ...	2- 2-12	4,850	sd. sh. drlg.
Union Oil, No. 1 Wilcox, Montebello, Los Angeles ..	2- 2-12	710	sd. sh. drlg.
McVicar & Rood, No. 1 Manz, Montebello, L. Angeles	2- 2-12	3,729	sd. sh. drlg.
Fullerton Oil, No. 5 Whittier, Los Angeles	25- 2-11	1,132	sd. sh. drlg.
Hilidon Oil, No. 1 Poole, North Long Beach, L. A. ..	13- 4-13	2,146	sd. sh. drlg.
Signal Oil, No. 1 P. E., North Long Beach, L. A. ..	13- 4-13	1,990	sd. sh. drlg.
Abrams, John, No. 1 Flood Control, Los Angeles ..	13- 4-13	4,644	pump 150 b.d.
Kramlidon Oil, No. 1 Long Beach, Los Angeles	13- 4-13	5,567	sd. sh. drlg.
Marvell Oil, No. 1 Long Beach, Los Angeles	19- 4-12	3,197	sd. sh. drlg.
Dunlap Oil, No. 13 Long Beach, Los Angeles	30- 4-12	2,192	sd. sh. drlg.
Shell Oil, No. 1 Goddard, Long Beach, Los Angeles ..	19- 4-12	3,520	C.P. 2,950
Shell Oil, No. 44 Alamitos, Long Beach, Los Angeles	28- 4-12	2,182	sd. sh. drlg.
Yunker, C. F., No. 2 Barbara, Long Beach, L. Angeles	24- 4-13	3,596	sd. sh. drlg.
Union Oil, No. 100 Santa Fe Springs, Los Angeles ..	6- 3-11	9,945	flow 25 b.d.
W. P. R. Oil, No. 3 Huntington, Orange	35- 5-11	7,410	P.B. 6,900
Brea Canyon Oil, No. 48 Brea Canyon, Orange	2- 3-10	2,698	sd. sh. drlg.
Standard Oil, No. 127 Murphy, West Coyote, Orange	18- 3-10	3,240	cmtd. 3,224
Standard Oil, No. 2 Bastanchury, W. Coyote, Orange	21- 3-10	4,950	sd. sh. drlg.
Standard Oil, No. 65 Emery, West Coyote, Orange ..	24- 3-11	2,952	hd. sd. drlg.
Standard Oil, No. 2-12 Coyote, East Coyote, Orange	22- 3-10	3,997	sd. sh. drlg.
Bartholomae Oil, No. 6 Sterns, East Coyote, Orange	22- 3-10	3,094	sd. sh. drlg.
Oliver & Owen, No. 1 Anderson, Yorba, Orange	22- 3- 9	1,363	hd. sd. drlg.
Beverly Hills Pet., No. 1 Fricke, Yorba, Orange	21- 3- 9	1,914	cleaning out
Brown & Co., No. 1 Hurley, Yorba, Orange	22- 3- 9	1,823	P.B. 1,787
Burmah Oil, No. 1 Sloan, Yorba, Orange	21- 3- 9	1,590	sd. sh. drlg.
Signet Oil, No. 1 Kraemer, Yorba, Orange	21- 3- 9	1,947	cleaning out

KANSAS

Week Ending April 2 (Descriptions are East unless marked otherwise)

Barber County

Carter Oil Co. et al No. 1 Ely, C NE NW sec. 6-32-14w. T.D. 4,980 ft.; D.&A.
Palmer Oil Corp. et al No. 1 Warwick, C NW sec. 29-31-10w. R.U.S.T. 4,787 ft.

Barton County

Crown Oil Co. No. 1 Schartz, NW sec. 7-20-11w. Cmtd. 7-in. 3,346 ft.; W.O.C.; H.F.O.
R. E. Day et al No. 1 Felts, SE SE NE sec. 14-16-12w. S.D. 1,875 ft.
Gear and Atlantic Ref. Co. No. 1 Sullivan, NE SE SW sec. 29-17-13w. Drlg. 3,200 ft.
Murfin et al No. No. 1 Rexroot, NW SE sec. 14-17-13w. Drlg. 1,895 ft.
C. L. Price No. 1 Hammeke, NE NE SW sec. 12-18-12w. Sil. 3,415-27 ft.; T.D. 3,433 ft.; P.B. 3,429 ft.; est. 20 B.O. P.D. and 2 B.W.
Price et al No. 1 Wondra, NW NE sec. 10-17-13w. U.R. 8-in. 2,485 ft.
Sinclair Prairie Oil Co. No. 1 Frederick, SW SW SE sec. 16-16-11w. Arb. 3,322 ft.; T.D. 3,346 ft.; rng. 5-in. csg.; W. O.C.

Butler County

T. S. Dustin No. 1 Miley, SE NW NE sec. 17-27-5e. C.O. 800 ft.
Saco Oil Co. et al No. 1 Pettit, SW NW SW sec. 21-28-6. Drlg. 1,975 ft.

Chase County

T. D. Duffy No. 1 Leedy, NE NW NW sec. 26-22-9. Drlg. 1,650 ft.

Cowley County

Bess & Gralapp et al No. 1 Hunt, CNL NE NW sec. 18-34-5e. Drlg. 1,618 ft.
Arthur Brewer No. 1 McDaniels, SW cor. sec. 24-30-4e. Drlg. 2,315 ft.
Palmer Oil Corp. No. 1 Houser, SE NW SW sec. 13-30-3e. Drlg. 300 ft.
Smith et al No. 1 Wilson, SE SW NW sec. 9-33-6. T.D. 800 ft.; skd. rig.
Earl Wakefield No. 1 White, NW NE sec. 4-33-4e. Drlg. 2,730 ft.

Dickinson County

Fred Franks et al No. 1 Huffman, NW NW sec. 11-13-1e. Rig.

Ellis County

Carter Oil Co. No. 1 Foster, SE NW sec. 1-15-16w. T.D. 3,447 ft.; R.U.S.T.
Hays & Sackrider No. 1 Windholtz, NE cor. sec. 2-13-16w. T.D. 3,242 ft.; pot. 1,236 B.O.; S.D.O.
Twin Drlg. Co. et al No. 1 Hall, NW SW NE sec. 1-12-17w. T.D. 3,621 ft.; D.&A.
Western Kansas O. & R. Co. et al No. 1 Cole, NE SE SE sec. 24-11-20w. Drlg. 3,400 ft.

Ellsworth County

Ralph Wixson et al No. 1 Peterman, SW cor. sec. 28-17-10w. T.D. 3,306 ft.; P.B. 3,300 ft.; acd.; 2½ B.O.P.H.

Finney County

Atlantic Ref. Co. No. 1 Nunn, C SE NE sec. 27-21-34w. Fsg. 4,311 ft.

Ford County

Sinclair Prairie Oil Co. No. 1 Young, CSL NE sec. 34-27-21w. W.O.C. 313 ft.

Graham County

Continental Oil Co. and Cities Service Oil Co. No. 1 Morel, C W½ E½ NE sec. 15-9-21w. T.D. 3,720 ft.; O.I.H.

Greenwood County

C. C. Whitaker et al No. 1 Bressner, NW SE sec. 8-26-13e. S.D. 750 ft.

Harper County

Franklin Drlg. Co. No. 1 Walts, NE SW sec. 24-34-6w. Drlg. 4,895 ft.

Jackson County

Lemmick Oil Co. No. 1 Marble Bank, C NE NE sec. 26-9-14. Drlg. 900 ft.

Jewell County

Hollingsworth Bros. No. 1 Wolfe, NE SW SE sec. 14-4s-8w. S.D. 100 ft.

Lane County

Phillips Pet. Co. No. 1 Kees, C SE SE sec. 3-19-30w. T.D. 4,911 ft.; S.D.

McPherson County

Darrah et al No. 1 Decker, SW SW SE sec. 12-21-2w. Drlg. 3,344 ft.

Meade County

Barnett et al No. 1 Adams, NW SE sec. 22-34-30w. S.D. 69 ft.
Bryan & West No. 1 Brown, NE SW sec. 5-33-27w. Spd. and S.D.

Ness County

Marshall Drlg. Co. et al No. 1 Anderson SW NW sec. 23-16-24w. Spd. and abd.
Trojan O. & G. Co. No. 1 Moses, C SW NW sec. 10-18-25w. S.D. 500 ft.
Trojan O. & G. Co. No. 1 Page Milling Co., SE SE NW sec. 36-18-26w. S.D. 3,270 ft.

Reno County

Amerada Pet. Corp. and Westgate-Greenland Oil Co. No. 1 Johns, SE cor. sec. 25-22-5w. R.U.S.T. 3,902 ft.; 250 ft. O. I.H.
Carey et al No. 1 McPheeters, NE NW sec. 22-26-8w. U.R. 6-in. 3,830 ft.
McCole et al No. 1 Mathews, SW NW NW sec. 15-24-10w. U.R. 8-in. 3,388 ft.

Rice County

Marylyn Oil Co. et al No. 1 Vincent, NW NW NE sec. 5-21-10w. Rig.
Price et al No. 1 Gemeinhardt, NE SE sec. 18-18-10w. T.D. 3,305 ft.; P.B. 3,298 ft.; pmpd. 15 B.O. and 25% wtr. daily.

Rooks County

Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. C.O. 3,384 ft.
Producers Oil Co. No. 1 Ham, SW SW NW sec. 25-7-19w. Set 12-in. 312 ft. cor.); S.D. 350 ft.

Russell County

Gulf Oil Corp. No. 1 Punker, C E½ NW SW sec. 22-15-12w. Drlg. 3,205 ft.
Jones & Shelbourne et al No. 1 Kuhnle, SE NW sec. 4-15-12w. Cmtd. 8-in. 3,033 ft., T.D.; O.I.H.; W.O.C.
Lauck & Moncrief No. 1 Miller, NE NW NW sec. 29-13-14w. Drlg. 2,630 ft.
Parks et al No. 1 Gorham Est., SW NW sec. 19-15-15w. T.D. 3,118 ft.; cmtd. 6-in.; O.I.H.
Simpson et al No. 1 Boxberger, NE SE NW sec. 10-15-14w. U.R. 5-in. 3,210 ft.
Smith & Unruh No. 1 Stielow, NW cor. sec. 32-11-14w. Fsg. 2,254 ft.
G. A. Stearns et al No. 1 Stielow, NW cor. sec. 32-11-14w. S.D. 2,254 ft.

Sedgwick County

Frank Hudson et al No. 1 Fulton, NE SE sec. 35-28-1e. S.D. 1,738 ft.
McKnab No. 1 Garrett, SE SW SW sec. 18-29-2e. Drlg. 3,130 ft.
Union O. & R. Co. et al No. 1 Howell, SW cor. sec. 6-29-1e. Set 10-in. 2,298 ft.; recmtd.

Stafford County

Cardinal Oil Co. et al No. 1 Fischer, SW NW SW sec. 31-21-12w. Drlg. 2,636 ft.
Continental Oil Co. et al No. 1 Fair, CNL SW sec. 12-25-13w. R.U.S.T. 4,163 ft.
Continental Oil Co. and Phillips Pet. Co. No. 1 Curtis, SE cor. sec. 26-24-13w. Drlg. 2,700 ft.
National Ref. Co. No. 1 Bonham, SW SE sec. 28-25-12w. T.D. 4,213 ft.; acd.; 1 B.F.P.H.; ¾ wtr.
Pryor & Lockhart No. 1 De Selms, NE sec. 3-25-11w. Drlg. 3,635 ft.

Sumner County

Hapenny et al No. 1 Evers, SE SE NE sec. 27-31-2e. O.W.D.D.; drlg. 1,622 ft.
Murphy et al No. 1 Tate, SE NW sec. 31-32-2e. T.D. 173 ft.; W.O.C.
Saco Oil Co. et al No. 1 Phipps, SW SE NE sec. 24-30-1w. Drlg. 3,060 ft.
Shawver and Pryor & Lockhart et al No. 1 McKowen, SW cor. sec. 18-32-1w. Drlg. 2,936 ft.

Trego County

Manning & Martin No. 1 Lynd, NW SW sec. 16-11-21w. T.D. 4,057 ft.; D.&A.

Woodson County

Craft No. 1 Pratt, NW SW sec. 36-26-15. Drlg. 1,485 ft.
Union O. & R. Co. No. 1 Laidlow, CEL NW SW sec. 35-25-15e. Miss. 1,397-1,400 ft.; T.D. 1,404 ft.; C.O.

OKLAHOMA

Week Ending April 2

NORTHERN OKLAHOMA

Beckham County

Mid-American Oil Co. No. 1-A Biscoe, SW cor. sec. 28-8-22w. T.D. 2,705 ft.; S.D.

Cleveland County

W. A. Delaney et al No. 1 Bugher, SE SE SW sec. 12-7-2w. Drlg. 5,400 ft.

Comanche County

Clyde Roach No. 1-A Green, SE SE SW sec. 2-1n-13w. T.D. 670 ft.; S.D.

Creek County

M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. T.D. 3,018 ft.; 2,000 ft. W.I.H. and S.S.O.; S.D.

Garfield County

H. R. Hollenback et al No. 1 Clark, NW cor. sec. 34-21-6w. Second Wilcox 7,298 ft.; T.D. 7,336 ft.; flwd. 203 B.O. through choke in 24 hrs.

J. E. Kendall et al No. 1-A State, SW cor. sec. 13-23-3w. Spd.

Garvin County

B. C. D. Edwards No. 1 Clark, NE cor sec. 16-3n-3e. T.D. 2,676 ft.; shot; P. 20 B.O. and 75 B.W. in 24 hrs.

Grady County

Doyle Pet. Co. No. 1 Huffine, NW NW SE sec. 30-5-8w. Drlg.

Gulf Oil Corp. No. 1 Thomas, SW NW NW sec. 14-4-5w. T.D. 11,415 ft.; pipe stuck.

Greer County

J. H. Everitt No. 1 Graumann, NE NW NW sec. 11-5-21w. T.D. 460 ft.; S.D.

H. W. McDonald No. 1 Fite, SE SE sec. 34-7-21w. T.D. 1,114 ft.; H.F.W.; S.D.

J. I. Medlin et al No. 1 Broudie, NW cor sec. 5-6n-20w. T.D. 90 ft.; location abd.

Hughes County

Amerada Pet. Corp. and Stanolind O. & G. Co. No. 1 Preame, NW NW SE sec. 29-9-9. Core 4,267-68 ft.; P.B. 3,367 ft.; W.O.C.

Homer Doup et al No. 1 Bank, NE NE NW sec. 7-7-9. Drlg. by tools at 370 ft.

E. H. Moore et al No. 1 Hunter, NE NE NW sec. 30-4-9. Drlg. 4,078 ft.

Phillaine Oil Co. No. 1 Morrison, SE SE SW sec. 13-9-10. Drlg. 2,886 ft.

Phillips Pet. Co. No. 1 Becker, NE NW SW sec. 8-5-10. T.D. 6,286 ft.; plug. 5,612 ft.; drld. out to 5,660 ft.; flwd. 538 B.F., 2% water; testing.

Troup & Strickland No. 1 Brown, NW SW NE sec. 32-6-8. S.D. 660 ft.

Kay County

J. R. Pierse No. 1 Hannon, SE cor. sec. 26-28-2e. T.D. 2,000 ft.; S.D.

E. J. Shaffer et al No. 1 McKee, NE NW sec. 20-28-1w. T.D. 2,500 ft.; S.D.

Kiowa County

Anderson-Prichard Oil Corp. No. 1 Hancock, SE SE NW sec. 23-6-15w. T.D. 737 ft.; running 10-in. csg.

Gauntt & Baker No. 1 Parks, NW NW SW sec. 29-7-20w. S.D. 720 ft.

Lincoln County

Stanolind O. & G. Co. and Amerada Pet. Corp. No. 1 Strader, NW NW NE sec. 18-13-3e. T.D. 5,277 ft. D. & A.

Wilcox O. & G. Co. No. 1 Evans, SW SW NW sec. 21-14-6. T.D. 3,106 ft.; R.U.S.T.

Wilcox O. & G. Co. No. 1 Royer, SE SE NE sec. 18-14-6. T.D. 3,372 ft.; S.O.& W.; S.D.

Logan County

Carter Oil Co. No. 1 Lydick, C E½ NW NE sec. 23-15-4w. Drlg. 4,200 ft.

Muskogee County

Midco Oil Corp. No. 1 Dunagan, SE SE NE sec. 31-11-19. Drlg. 1,600 ft.

Okfuskee County

Alma Oil Co. No. 1 Martin, SW cor. sec. 4-12-7. Drlg. 350 ft.

Burke-Greis Oil Co. No. 1 Capps, SE cor. sec. 7-13-7. T.D. 3,227 ft.; R.U.S.T.

Osage County

Chevalier-Simon No. 1 Osage, NW NW SW sec. 33-27-5. Drlg. 1,760 ft.

Norbia Oil Co. No. 1 Osage, SE cor. sec. 18-25-7. S.D. 1,129 ft.; W.O. water.

Payne County

R. L. Kemp et al No. 1 Rafferty, SE SE NE sec. 6-18-5. T.D. 3,666 ft.; H.F.O. in 12 hrs.

Marydun Oil Co. et al No. 1 Moore, SE SW NW sec. 17-18-1e. Drlg. 5,301 ft.

Sun Oil Co. & Loffland Bros. No. 1 Scafe, SE SE NE sec. 12-18-1e. Drlg. 1,581 ft.

Pontotoc County

Caloma Oil Corp. No. 1 Brents, SE NE SW sec. 4-1n-6. T.D. 1,430 ft.; S.D.

Cowley et al No. 1 McCormick, NW SW SW SE sec. 27-2n-4e. T.D. 275 ft.; S.D.

Jack Lynch et al No. 1-A Parker, SW SW SE sec. 17-4-8. T.D. 2,470, S.D.

Union Dev. Co. No. 1 Abbott, SW NW NE sec. 34-3-6. T.D. 3,320 ft.; S.D.

Pottawatomie County

Mid-Continent Pet. Corp. et al No. 1 Smith, NE SE SW sec. 31-7-4. Drlg. 1,230 ft.

Seminole County

C. E. Davis et al No. 1 Jones, NW NE SW sec. 34-6-5. T.D. 2,314 ft.; P.B. 2,307 ft.; swb. 70 B.O. and 14 B.W. Pumping.

W. A. Delaney et al No. 1 Swan, SE SW SW sec. 18-6-6. Cellar and pits.

W. B. Pine No. 1 Wright, SE SE NE sec. 16-6-6. Drlg. by cement.

Summitt Drlg. Co. No. 1 Wass, SE NE NE sec. 30-8-7. Drlg. 3,295 ft.

W. A. Villines et al No. 1 Swan, NW NE NW sec. 26-7-5. T.D. 3,001 ft. swb. 135 B.O. in 24 hrs.

H. V. Woodson and Marydun Oil Co. No 1 Gilliland, SE SW sec. 24-11-7. T.D. 4,295 ft.; M.I.T.

Texas County

Hagey et al No. 1 Peck, C NE sec. 6-1n 13ecm. T.D. 2,842 ft.; csg. collapsed; S.D.

Harkendorf & Kuhn No. 1 Wiggins, C NW sec. 1-2n-14ecm. 30,000,000 ft. gas 2,745-53 ft.; S.I.

Washita County

L. B. McWhirter No. 1 fee, NW SW SW sec. 34-8-19w. Drlg. 2,125 ft.

SOUTHERN OKLAHOMA

Atoka County

Amerada Pet. Corp. and Stanolind O. & G. Co. No. 1 Ridgway, NE cor. sec. 24-3s-9. T. D. 3,666 ft.; tstg.

C. M. Sheldon and Gardner Pet. Co. No 1 Lee, NE NW SW sec. 2-4s-10e. Drlg. T.D. 2,528; tstg.

Carter County

Texas Co. No. 1-B Cathey, SE NE NE sec. 6-5s-1w. Drlg. 5,237 ft.

Johnston County

W. T. Sheldon No. 1 Chapman, C NW NW sec. 26-4s-6e. T.D. 3,176 ft.; P.B. 2,204 ft.; shot; C.O. 1,000 ft.; S.O.G. S.D.

Love County

Sinclair Prairie Oil Co. No. 1 Peabody, NE cor. sec. 35-6s-2w. Drlg. sh. 5,085 ft.

Marshall County

Paul Robb et al No. 1 Vittitoe, C NE SE sec. 11-5s-4e. T.D. 5,461 ft.; C.O.; to run csg.

Stephens County

Coline Oil Co. No. 1 Johnson, C SW SE SE NE sec. 1-2n-8w. T.D. 10,000 ft.; P.B and drld to 9,086 ft.; Fsg.

Helmerich & Payne No. 1 Mauersberger, C S½ SW SE sec. 29-2n-8w. T.D. 5,512 ft.; to deepen.

Tillman County

H. I. Grimes et al No. 1 Hall, SW NE SW sec. 12-35-19w. Drlg. 2,760 ft.

Russell & Ray No. 1 Hasley, NW NE NW sec. 4-1s-19w. T.D. 80 ft.; set csg.

Smith No. 2 Hammell, NE NW NW sec. 6-5s-15w. Drlg. 1,800 ft.

ARKANSAS

Bradley County

Phillips Pet. Co. No. 1 Marsden, sec. 9-16w-11s. R.U.

Cleveland County

J. T. Markwick and E. O. Olds No. 1 A. Vance, NW cor. NW sec. 18-11-11. Drlg. wtr. sd. 3,500 ft.

Columbia County

Kerr-Lynn Oil Co. No. 1 Barnett, sec. 14-17-20. Packer set at 7,630 ft.; D.S.T. 7,630-7,740 ft.; ¾-in. bttm. ck. and 1½-in. top ck.; flwd. 21 B.P.H.; no press. ga.; grav. oil 37.9 cor.; pulled tstg. tool and ran tbg. to comp.; T.D. 7,740 ft.

Standard Oil Co. of La. No. 1 Bodcaw-Barbara, NE cor. SE NW sec. 18-16-22. Top L. 7,292 ft.; L. 7,292-94 ft.; showed S.W.; D.&A.; T.D. 7,444 ft.

Standard Oil Co. of La. No. 1 S. T. Crone, NW cor. NW SE sec. 8-16-22. Top L. 7,264 ft.; porous and sat. to 7,272 ft., T.D.; D.S.T. 7,225-72 ft.; rec. 600 ft. oil and 60 ft. oil and mud in 20 min.; stk. 7-in. csg. 6,970 ft.; tstd. csg. and perf.; set 7-in. at 7,260 ft.; wshd. with oil; swbg. 7,272 ft.

Standard Oil Co. of La. No. 1 W. P. Phillips et al. 660 ft. N and W, C sec. 15-17-19. Drlg. rd. sh. 5,671 ft.

Standard Oil Co. of La. No. 1 Waters et al, 660 ft. SE cor. SE SE sec. 7-16-22. R.U.

Crittendon County

Manning & Martin No. 1 Cartwright, SW cor. sec. 16-7n-8e. S.D. 4,200 ft.

Desha County

Columbian Fuel Corp. No. 1 Cross, SW cor. sec. 34-8s-3w. Drlg. 1,500 ft.

Hempstead County

H. D. Easton et al No. 1 LaGrone, sec. 5-12-26. T.D. 2,940 ft.; P.B. 1,007 ft.; drlg. sh.&sd. 2,645 ft.

Lincoln County

Fitzwater, Inc., No. 1 Owens, sec. 26-9s-8w. Drld. to 1,130 ft.; S.D.

Little River County

Heenan & Coe No. 1 Waldrop, SE NW sec. 21-12-28. S.D. 1,960 ft.

Joe G. Strahan et al No. 2 Dierks Lbr. Co. Cd. sh.&sd. 2,459 ft.

Miller County—Rodessa

F. W. Burford No. 2 Ahern, sec. 10-20-28. Drlg. sh.&L. 5,157 ft.

Burden & Cummings No. 1 Treadway, sec. 10-20-28. Drlg. anhy. 6,024 ft.

Gerhig Co. of Ark. No. 1-B Mitchell, sec. 11-20-28. Drlg. L.&sh. 5,700 ft.

W. M. Layton No. 2 McKellar, sec. 15-20-28. Drlg. rd. bds. 4,622 ft.

McClanahan & Feazel No. 2 Eason, C N½ NW SW sec. 12-20-28. Set 7-in. csg. 6,060 ft.; tstd. some oil 6,112 ft.; acd. with 3,000 gal.; tstd. small S.O.& G.; pld. tbg. to swb. csg.; T.D. 6,112 ft.

B. B. Orr No. 1 Mitchell, sec. 10-20-28. Set 9⅝-in. csg. 1,996 ft.; drlg. anhy. 5,660 ft.

Roberts Drlg. Co. No. 2-B Capps, sec. 10-20-28. Drlg. sh. 1,557 ft.

Texas Canadian Oil Corp. No. 2 Thomas, NE cor. NW SE sec. 12-20-28. T.D. 6,203 ft.; perf. 7-in. csg. 6,108-78 ft.; tstd. S.W.; arng. P.B. 6,160 ft.; tstd. S.W.; set pkrs. 6,140 ft.; tstd. S.W.; cmtd. off perf. to retest.

Mrs. S. O. Thompson No. 1 Concord Methodist Church, NE cor. SE NE sec. 10-20-28. Drlg. L. 5,967 ft.

Mrs. S. O. Thompson No. 2 Greer, sec. 11-20-28. Drlg. sh.&L. 5,019 ft.

Ouachita County

Copenhaven Oil Corp. No. 1 Evans, NE cor. NE SW sec. 20-11-19. S.D. 1,825 ft.

A. H. Tarver et al No. 1 Guy Smith, sec. 16-14-19. Tokio sd. 2,186-2,210 ft.; T.D. 2,331 ft.; W.O.

Pulaski County

A. L. Kitselman, No. 2 A. L. Kitselman Jr., SE SE SW sec. 2-1s-13e. Drlg. v. hd. bl. slate 2,610 ft.

Union County—Shuler

Alice Sydney Oil Co. No. 1 Powledge, SE cor. SW SE sec. O.W.W.O.; ran Schlumberger; set 7-in. at 7,721 ft.; T.D. 7,729 ft.

E. M. Jones No. 3 Marine Oil Co., N NW SE sec. 17-18-17. Set 16-in. csg 138 ft.; drlg. rd. and gry. sh. 4,934 ft.

E. M. Jones et al No. 2-A Murphy, sec 19-18-17. Drlg. rd. and gry. sh. 3,490 ft.

Lion Oil Ref. Co. No. 2 Marine Oil Co., SW cor. E½ SE¼ sec. 17-18-17. T.D. 7,650 ft.; 5½-in. csg. 7,648 ft.; comp.; 35 B.P.D.; ½-in. ck.

Lion Oil Ref. Co. No. 3 Marine Oil Co. sec. 17-18-17. Set 10¾-in. csg. 2,240 ft.; drlg. 2,275 ft.

Lion Oil Ref. Co. No. 1 Mayfield, SE cor. Lot 3, Fract. NW¼ sec. 18-18-17. Drlg. rd. bds. 6,262 ft.

Lion Oil Ref. Co. No. 1 Miller, SW cor NE NW sec. 18-18-17. T.D. 7,710 ft.; set 7-in. at 7,708 ft.

Lion Oil Ref. Co. No. 4-A Edna Morgan NW cor. Lot 1, NW sec. 18-18-17. Drlg. rd. sdy. sh. 7,163 ft.

Lion Oil Ref. Co. No. 5-A E. Morgan. NE cor. Lot 7, SW sec. 18-18-17. Drlg rd. sdy. sh. 7,000 ft.

Lion Oil Ref. Co. No. 2-C D. S. and J. C. Morgan, SW cor. SE SE sec. 18-18-17. Cg. 7,513 ft.

Marine Oil Co. No. 5 fee, sec. 17-18-17. R.U.

Marine Oil Co. No. 6 fee, sec. 17-18-17. R.U.

Marine Oil Co. No. 3 Justiss, NE cor Lot 7, NW sec. 18-18-17. T.D. 7,610 ft.; set 7-in. csg. 7,610 ft.; comp.; 1,069 B. P.D. on ½-in. ck.

Marine Oil Co. No. 1 Miller, SE cor. Lot 1, NW sec. 18-18-17. Top Jones sd. 7,543 ft.; cg. 7,598 ft.

Phillips Pet. Co. No. 3 Justiss, Lot 6, sec. 18-18-17. Drlg. 2,243 ft.

Phillips Pet. Co. No. 4 Justiss, Lot 6, sec. 18-18-17. Set 10¾-in. csg. 2,266 ft.; drlg. rd. and gry. sh. 6,150 ft.

Phillips Pet. Co. No. 1 Marine Oil Co., NE cor. NW NE sec. 20-18-17. Top Jones sd. 7,527 ft.; Top L. 7,612 ft.; salty taste; T.D. 7,640 ft.; set 7-in. csg. 7,617 ft.; comp.; 901 B.P.D.; 24/64-in. ck.

Phillips Pet. Co. No. 2 Marine, NE cor NW NE sec. 20-18-17. Drlg. rd. and gry. sh. 5,560 ft.

Phillips Pet. Co. No. 3 Marine Oil Co., sec. 20-18-17. Drlg. 1,500 ft.

Phillips Pet. Co. No. 4 Marine Oil Co., sec. 20-18-17. R.U.

Phillips Pet. Co. No. 5 Marine Oil Co., sec. 20-18-12. R.U.

Phillips Pet. Co. No. 2 Rosen, SE cor SW NE sec. 18-18-17. Top Jones sd. 7,531 ft.; top L. 7,634 ft.; T.D. 7,700 ft.; set 7-in. csg. 7,682 ft.; comp.; 1,113 B.P.D.; ¾-in. ck.

Alice Sydney Oil Co. No. 2 Powledge, sec. 7-18-17. R.U.

Texas Canadian Oil Corp. No. 1 Powledge, C NE NW NW sec. 21-18-17. Drlg. rd. and gry. sh. 6,400 ft.

Union County—Other

Ark. Southern Oil Corp. No. 2-A Simmons, SW cor. NE NW sec. 15-18-13. T.D. 2,307 ft.; O.I.H.; pmpg.; no ga.

Ark. Southern Oil Corp. No. 3-A Simmons, sec. 15-18-13. R.U.

E. G. Bradham No. 1 S. L. Robbins, SW cor. SW NE sec. 12-19-16. S.D. sdy. sh 2,300 ft.

Penn-Ark. Pet. Corp. No. 1 Raulston, sec 12-17-14. T.D. 3,175 ft.; S.D.; litigation.

W. D. Wingfield, Tr. No. 2 Kidd Est., SE cor. NW SW sec. 15-18-13. Sd. S.D. 2,257-2,300 ft.; set 6-in. csg. 2,250 ft.; T.D. 2,300 ft.; W.O.S.R.

W. D. Wingfield, Tr., No. 1 Union Sawmill Co., sec. 15-18-13. S.D. 482 ft.

LOUISIANA

NORTH LOUISIANA PROVEN

Caddo—Rodessa

Gulf Oil Corp. No. 2 Allison, sec. 3-23-16. Drlg. sh.&L. 3,640 ft.

J. S. Rushing No. 1 Zylks, sec. 10-23-16. R.U.

Shell Pet. Corp. No. 1 Boykin, Gentry Sur. Set 8⅝-in. csg. 1,019 ft.

Shell Pet. Corp. No. 2-B U. S. Govt., SE cor. sec. 3-23-16. Drlg. sh.&L. 5,664 ft.

Shell Pet. Corp. No. 3-B U. S. Govt., sec. 3-23-16. Drlg. L. 5,150 ft.

Shell Pet. Corp. No. 4-B U. S. Govt., sec. 3-23-16. Drlg. sh.&anhy. 5,525 ft.

Shell Pet. Corp. No. 5-B U. S. Govt., sec. 3-23-16. Drlg. 50 ft.

N. LOUISIANA WILDCATS

Bienville Parish

Gulf Ref. Co. No. 1 Goodpine, sec. 25-14-8. S.D., high wtr., 9,288 ft.

Producers O. & G. Co. No. 1 Locke, NE cor. sec. 9-15-10. O.W.W.O.; old T.D. 2,960 ft.; rmd. to 800 ft.; S.G.; W.O.

Bossier Parish

Premier Inv. Co. No. 1 McDade, SE SW NE sec. 28-19-11. S.D., high wtr., 2,006 ft.

Sloan, Lloyd et al No. 1 Sherrill, sec. 12-19-12. Set 10-in. at 46 ft.

Triangle Drlg. Co. No. 2-C Skannel, sec. 13-17-12. T.D. 3,140 ft.; P.B. 3,120 ft.; tstg.; 5½-in. csg. 3,094 ft.; comp.; 1,000 B.P.D. on ½-in. ck.

Union Prod. Co. No. 2-C Skannel, sec. 13-17-12. Drlg. sh. 3,048 ft.

Caddo Parish

Ardsell Oil Co. and H. W. Russell No. 2 Muslow, sec. 26-21-16. O.W.W.O.; T.D. 2,246 ft.; set 5⅛-in. csg. 2,205 ft.; W. O.S.R.

D.O.K. Oil Co. No. 1 Player, SE cor. NW SE sec. 26-21-5. O.W.W.O.; old T.D. 1,600 ft.; set 4½-in. csg. 2,252 ft.; comp.; 10,288,000 ft. gas per day; R.P. 120 lbs.; T.D. 2,255 ft.

Driscoll No. 1 Muslow, sec. 4-20-15. T.D. 2,175 ft.; set 6⅝-in. csg. 2,152 ft.

J. P. Driscoll No. 2 Sattelite, sec. 10-20-15. Drlg. sh. 455 ft.

W. D. Flynn No. 3 Natalie, SW cor. sec. 10-21-16. T.D. 1,029 ft.; W.O.S.R.

W. D. Flynn No. 4 Natalie, SE cor. sec. 10-21-16. Set 7-in. at 998 ft.

W. H. Harrison, Jr., No. 3 Crystal Shoreline, SW cor. SW NW sec. 25-21-16. Set 4-in. csg. 2,255 ft.; T.D. 2,264 ft.; W.O.S.R.

J. T. Humphrey No. 1 Caddo Levy Bd., sec. 26-21-16. R.U.

La. Oil Prod. Co. No. 14-B Muslow, sec. 4-20-15. Set 6-in. csg. 2,148 ft.; tstg.; T.D. 2,154 ft.

Magnolia Pet. Co. No. 24 Dillon Hrs., sec. 23-21-15. Set 7-in. csg. 1,446 ft.

Olson Drlg. Co. No. 1 Sharp, C NW NE sec. 10-18-16. Sd. 6,021-27 ft.; T.D. 6,065 ft.; perf. 6,011-21 ft.; no show; perf. 6,002-11 ft.; well started flwg. mud; comp.; 2,250,000 ft. gas and spray dist.; perf. 7-in. at 6,011-21 ft.; D.S. tstd. dry; perf. 5,994-6,002 ft. and comp.; C.I.; C.P. 2,300 lbs.; T.D. 6,065 ft.

Pet. Heat & Power Co. No. 3 Stiles, sec. 33-21-16. Set 6-in. at 948 ft.

Petroleum Heat & Power Co. No. 1 Wemple, NW cor. sec. 14-20-15. Set 6-in. csg. 2,185 ft.; T.D. 2,239 ft.; W.O.

W. G. Ray Drlg. Co. No. 5 Hunter, NE cor. sec. 17-19-14. T.D. 2,451 ft.; set 4½-in. csg.; pmpg. S.W.; S.O.

J. E. Sedberry No. 1-A Dickinson, sec. 10-19-14. Set 10-in. at 80 ft.; W.O.C.

G. R. Stevens No. 3 Hart, sec. 22-21-16. Drlg. 210 ft.

Tippett Oil Corp. No. 1 Lewis, sec. 27-20-16. Set 10-in. at 40 ft.

Triple M Oil Co. No. 1 Boisseau, sec. 34-21-16. Fsg. 1,720 ft.

Williams & Long No. 1 Stiles, sec. 20-21-16. Tstd. dry 1,023 ft.; arng. D.D.

Claiborne Parish

Atlantic Ref. Co. No. 1 English, sec. 29-21-4. Drlg. sh.&L. 4,923 ft.

Gulf Oil Corp. No. 1 Whitman, sec. 2-20-5. Set 10¾-in. csg. 714 ft.
E. O. Heath No. 1-C Patton, sec. 1-20-5. Set 5½-in. csg. 5,345 ft.; T.D. 5,370 ft. comp.; 30 B.P.H.; 1-in. ck.; T.P. 50 lbs.; C.P. 0; 3,000 gal.
Hollifield & McFarland No. 4 Patton Est., sec. 2-20-5. Drlg. ch. 2,322 ft.
W. H. North No. 1 Patton Est., sec. 11-20-5. Set 5½-in. csg. 5,324 ft.; tstg. 5,-347 ft.
E. T. Oakes et al No. 1 Whitman, sec. 2-20-5. Set 10¾-in. csg. 835 ft.
C. R. Schuster No. 1 Kilgore, sec. 28-21-15. R.U.
Union Prod. Co. No. 2 Brownfield, sec. 5-19-5. T.D. 9,964 ft.; sh.; recmtd. back to 8,850 ft.; rmg. bridge at 8,-475 ft.; drlg. sh. 9,882 ft.
Union Prod. Co. No. 1 Coleman, sec. 43-7-9e. Cg. 2,702 ft.
G. H. Vaughn No. 1 Eppinger, C SW NE sec. 30-21-4. Cg. 5,116 ft.
Weaver Oil Corp. No. 2 Edmonds, sec. 16-20-5. Drlg. sh.&L. 3,002 ft.

De Soto Parish

Clear Lake Oil Co. No. 1 J. A. Woolum, NW sec. 29-12-12. W.O.; T.D. 2,690 ft.
La. Seaboard Oil Ref. Co. No. 1 Lawrence, sec. 36-12-14. D.S.T. 1,989-2,012 ft. failed; arng. to retest 2,102 ft.
Major Oil Co. No. 1 Glauque, sec. 18-11-11. T.D. 2,780 ft.; comp.; 3,500,000 ft. gas; open tbg.; 7-in. csg. 2,740 ft.
Pet. Heat & Power Co. No. 1 DeSoto Corp., SE cor. SW NW sec. 7-11-11. Missed sd.; T.D. sh. 2,868 ft.; S.D.
Pet. Heat & Power Co. No. 1 Matthews, sec. 29-12-11. Drlg. L.&sh. 3,210 ft.
Pet. Heat & Power Co. No. 1 Sample, sec. 29-12-11. Set 7-in. csg. 2,680 ft.; perf. 2,649-59 ft.
Pet. Heat & Power No. 1 Williams, W. R., NW NE sec. 13-11-12. (Cor.); D.S. T. 2,800-18 ft.; S.G.; 7-in. csg. set 2,-827 ft.; caught fire; extinguished; W.O. 2,827 ft.
Texas Co. No. 2 White, SW NE sec. 24-12-12. Set 4½-in. csg. 835 ft.; tstd. dry; S.G.; W.O.; T.D. 850 ft.
Yandell Rogers No. 1 Kavanaugh, sec. 18-11-11. D.&A. 3,002 ft.

Franklin Parish

Southern Star Pet. Co. No. 2 Grayson, NE cor. NE SE sec. 36-12-6e. S.D. 1,-754 ft.

La Salle Parish

Alexander & Jarvis No. 1 Tremont, sec. 2-9-1e. Cg. 1,505 ft.
Cupples et al No. 1 King, sec. 25-10-1e. S.D. and W.O. 1,541 ft.
Pet. Heat & Power Co. No. 2 Wright, sec. 26-10-1e. Drlg. 987 ft.

Lincoln Parish

F. H. Brown No. 2 Patton, C S½ SE SW sec. 6-20-4. R.U. and S.D.
Magnolia Pet. Co. No. 2 Patton, sec. 7-20-4. Drlg. ch. rk. 2,300 ft.
Magnolia Pet. Co. No. 2 Pollock, C S½ NE SE sec. 6-20-4. Set 7-in. csg. 5,323 ft.; comp.; 375 B.P.D.; ½-in. ck.; T.D. 5,341 ft.
E. T. Oakes & Easton No. 1 Griggs, sec. 36-18-1w. T.D. 6,259 ft.; swbd. dry; W.O.

Morehouse Parish

W. J. Furlong No. 1 Clark, sec. 10-20-7e. Set 9⅝-in. csg. 2,805 ft.; top Big L. 6,207 ft.; S.D. hd. L. 7,023 ft.

Natchitoches Parish

Jos. E. Popkins No. 1 Peavy Lbr. Co., NW sec. 36-7n-9w. R.U.; S.D.

Red River Parish

Glassell & Whitehurst No. 1 LeLong, NE NW NE sec. 25-12-11. S.D. 2,874 ft.
Yandell Rogers No. 5 Gaspair, SE SW sec. 27-13-11. Set 5½-in. csg. 2,453 ft.; T.D. 2,474 ft.; W.O.S.R.

Sabine Parish

H. N. Morris No. 1 Irving & Bishop, C NW NW sec. 18-7-12. Drlg. sh. 1,800 ft.
Pearl Oil Corp. No. 7 Cranford, SW cor. SW SE sec. 20-9-13. Set 6-in. at 1,475 ft. acdzd.; T.D. 1,690 ft.; W.O.
Plymouth Oil Corp. No. 1 Kezerle, sec. 3-7-13. Drlg. sh. 950 ft.
W. L. Posey No. 1 Ramirez, C NW NW sec. 12-7-13. Set 6-in. csg. 2,111 ft.; tstd.; drlg. ch. rk. 2,510 ft.
Sutton-Zwolle Oil Co. No. 1 Sabine Lbr. Co., SE cor. NW NE sec. 23-7n-14w. Set 9⅝-in. csg. 2,215 ft.; D.S.T. 3,843-53 ft.; rec. 1,200 ft. P.L.O. 9 min.; W.P. 275 lbs.; T.D. 3,865 ft.; set 7-in. csg. 3,846 ft.; T.D. 3,857 ft.; acdzd. with 750 gals.; tstd. some oil; reacdzd. with 3,000 gals. and tstd. dry; W.S.O.

Tensas Parish

H. V. Schumacker No. 4 Mount Plantation, sec. 39-11-12e. S.D. fuel 900 ft.

Union Parish

Standard Oil Co. of La. No. 1 Frost Lbr., sec. 14-21-1e. Cg. ck. and stks. sd. 8,-493 ft.

Webster Parish

S. W. L. Backus No. 4 Pardee Co., NE sec. 3-22-11. Set 10-in. csg. 156 ft.
Fohs Oil Co. No. 1 Crichton, sec. 33-21-10. Drlg. L.&sh. 4,210 ft.
Hunt Oil Co. No. 6 Babb, C NE SW sec. 14-21-10. Drlg. L.&sh. 5,779 ft.
Hunt Oil Co. No. 8 Davis, C NW NE sec. 23-21-10. Top Tr. Pk. 5,646 ft.; top Holloway sd. 5,703 ft.; drlg. sh. 5,956 ft.
Hunt Oil Co. No. 19 Hope, NW cor. sec. 24-21-10. T.D. 6,385 ft.; 5-in. at 6,010 ft.; perf. 5,575-85 ft.; tstg.
Magnolia Pet. Co. No. 1 Coyle-Tiner, C sec. 21-21-10. Drlg. sh.&L. 7,368 ft.
Magnolia Pet. Co. No. 2 Crichton, SE cor. NE NW sec. 33-21-10. Top Holloway sd. 5,766 ft.; set 7-in. csg. 5,765 ft.; T.D. 5,776 ft.; comp.; 981 B.P.D.; ½-in. ck.; est. 1,000,000 ft. gas.
Magnolia Pet. Co. No. 1 Sexton Unit, NW SE sec. 32-23-9. Cd. Bodcaw sd.; no show; cd. sd. 8,293-8,310 ft.; gas odor; slight show gas and dist.; cg. hd. sdy. L. 8,599 ft.; ran Schlumberger 8,521 ft.; drlg. hd. L.&sh. 8,743 ft.
Midstates Oil Corp. No. 1 Welori Lbr. Co., C NW NW sec. 3-20-10. Drlg. anhy. 4,808 ft.
Morgan et al No. 1-A Hope, C NW NW sec. 25-21-10. Top Tr. Pk. 5,576 ft.; Holloway sd.; odor gas 5,600-08 ft.; cg. 5,-780 ft.
North American Oil Consol. Co. No. 1 Stewart, C SE NE sec. 32-27-10. T.D. 8,469 ft.; set 7-in. 8,411 ft.
Ohio Oil Co. No. 3 Bodcaw, Acct. 4, sec. 28-21-10. Drlg. L.&sh. 5,746 ft.
Ohio Oil Co. No. 49 Bodcaw (Acct. 3), C NW NW sec. 34-21-10. Set 13⅜-in. csg. 808 ft.; drlg. sdy. sh. 7,161 ft.
Ohio Oil Co. No. 1 Crutsinger, NE cor. sec. 35-21-10. Drlg. L.&sh. 7,065 ft.
Ohio Oil Co. No. 1 Gray, NW cor. SE NW sec. 28-21-10. Drlg. sh. 4,890 ft.
Ohio Oil Co. No. 24 Gray, NE cor. sec. 35-21-10. Drlg. sh. 5,610 ft.
Ohio Oil Co. No. 1 A. H. Gray, Acct. 3, sec. 26-21-10. R.U.
Ohio Oil Co. No. 5 Holloway, NE cor. SE NE sec. 23-21-10. Drlg. sd. 5,514 ft.
Ohio Oil Co. No. 1 Jackson, sec. 27-21-10. Set 13⅜-in. at 805 ft.
Ohio Oil Co. No. 1 Sandlin, sec. 27-21-10. Set 13⅜-in. at 810 ft.
Oliphant No. 3 Banks, sec. 34-21-10. Top Tr. Pk. 5,797 ft.; Holloway sd. 5,830 ft.; rng. el. survey.
A. G. Oliphant No. 1 Stewart, sec. 33-21-10. Holloway sd.; no show; drlg. sdy. sh. 6,446 ft.
Stanolind O. & G. Co. No. 1 Pardee Co., SW NE sec. 36-21-10. Drlg. sh.&L. 6,-525 ft.
Union Prod. Co. No. 1 Stewart, SE cor. SE sec. 28-21-10. Cg. 8,275 ft.

Winn Parish

G. W. Ziegen No. 13 La. Cen. Lbr. Co., sec. 4-13-1e. 12-in. at 62 ft.; W.O.C.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 1 Faulk, sec. 66-12s-3e. 10¾-in. csg. 1,585 ft.; T.D. 9,-000 ft.; abd.
Continental Oil Co. No. 1 Hebert, sec. 67-12s-3e. 10¾-in. csg. 1,510 ft.; T.D. 7,448 ft.; D.S. stk.
Continental Oil Co. No. 1 Motty, sec. 67-12s-3e. Drlg. sh. 328 ft.

Anse La Butte—St. Martin Parish

G. D. Spell No. 1 Deborah, sec. 117-9s-5e. R.U.

Bay St. Elaine—Terrebonne Parish

F. J. LeBlanc No. 2 Wurzlow, sec. 17-22s-18e. S.D. 816 ft.
Texas Co. No. 16 State, sec. 12-22s-17e. Drlg. sh. 4,720 ft.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 6 Wilbert Sons Lbr. Co., sec. 66-9s-11e. Drlg. sh. 6,-767 ft.

Bayou Cocotriz—Terrebonne Parish

Shell Pet. Corp. No. 5 Pelican, 10¾-in. csg. 2,480 ft.; T.D. 9,490 ft.; W.O.C.
Shell Pet. Corp. No. 5-B Realty Co. Drlg. sdy. sh. 5,100 ft.

Bayou De Allemands—St. Charles Parish

Amerada Pet. Corp. No. 1 Gheens Realty Co., sec. 56-15s-20e. Drlg. sh. 7,-267 ft.
Amerada Pet. Corp. No. 4 State, sec. 13-15s-20e. R.U.

Big Lake—Cameron Parish

Union Sulphur Co. No. 2 Miami Corp., sec. 19-12s-8w. T.D. 7,924 ft.; P.B. 7,-650 ft.; to sdtrk.; drlg. sh. 8,969 ft.

Black Bayou—Calcasieu Parish

Shell Pet. Corp. No. 40 Watkins. T.D. 6,235 ft.; flwd. 138 bbls. oil per day; ½-in. ck.
Shell Pet. Corp. No. 41 Watkins, sec. 17-12s-12w. R.U.

Caillou Island—Terrebonne Parish

Texas Co. No. 1 L.L.&E., sec. 18-23s-20e. Drlg. sh. 5,510 ft.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 23 School Ld., sec. 16-14s-13w. Drlg. rk. 4,695 ft.
Magnolia Pet. Co. No. 22 Cameron Meadows, sec. 21-14s-13w. Drlg. sdy. sh. 3,770 ft.

Chenevville—Rapides Parish

Amerada Pet. Corp. No. 4 Well, sec. 53-1s-2e. 9⅝-in. csg. 6,471 ft.; T.D. 7,045 ft.; salt; P.B. 6,718 ft.; perf. csg. 6,695-6,710 ft.

Charenton—St. Mary Parish

Pan American Prod. Co. No. 2-A Eucer, sec. 11-13s-9e. T.D. 1,905 ft.; R.U. to pmp.
Pan American Prod. Co. No. 5 Law Realty Co., sec. 21-13s-9e. T.D. 1,890 ft.; 7-in. csg. 1,829 ft.; I.P. 215 B.P.D.; ¼-in. ck.
Pan American Prod. Co. No. 3 Robichaux, sec. 11-13-9e. T.D. 2,654 ft.; 7-in. csg. 2,639 ft.
Pan American Prod. Co. No. 3 South Coast Corp., sec. 30-18s-10e. T.D. 7,-833 ft.; P.B. 7,228 ft.; sdtrkd.; drlg. sd. 7,727 ft.

Choctaw—Iberville Parish

La. Crusader Oil Co. No. 2 Schwing, sec. 29-8s-11e. R.U.
Standard Oil Co. No. 8 Gay, sec. 52-9s-11e. T.D. 6,801 ft.; P.B. 3,200 ft.

Darrow—Ascension Parish

Darrow Oil Co. No. 1 Dennis, sec. 68-10s-2e. T.D. 2,150 ft.
Humble O. & R. Co. No. 17 Community, sec. 33-10s-2e. Drlg. anhy. 6,709 ft.
Kiva Oil Co. No. 1 Duplessis, sec. 69-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 21 State, sec. 5-22s-16e. T.D. 7,174 ft.; P.B. 5,490 ft.; sdtrkd.; drld. to 7,351 ft.; 9⅝-in. csg. 7,263 ft.

Fausse Point—Iberia Parish

Texas Co. No. 4 State, sec. 35-11s-8e, 18⅝-in. csg. 90 ft.; top sd. 7,912 ft.; top salt 6,595 ft.; drlg. 9,065 ft.

Four Isle—Terrebonne Parish

Texas Co. No. 9 L.L.&E., sec. 24-21s-16e. T.D. 8,553 ft.; P.B. 3,881 ft.; sdtrk.; T.D. 6,943 ft.; 9⅝-in. csg. 6,870 ft.; drlg. sh. 10,719 ft.; no report.

Garden Island—Plaquemines Parish

Texas Co. No. 18 State, sec. 37-23s-33e. T.D. 5,064 ft.; P.B. and sdtrkd.; T.D. 4,912 ft.; fsg.
Texas Co. No. 26 state, sec. 37-23s-33e. T.D. 7,200 ft.; salt; 7⅝-in. csg. 4,421 ft.; perf. csg. 4,072-4,148 ft.; I.P. 550 B.P.D.; ¼-in. ck.

Hackberry—Cameron Parish

W. T. Burton No. 3 Lewis, sec. 22-12s-10w. R.U.
W. T. Burton No. 5 Vincent, sec. 22-12s-10w. T.D. 3,410 ft.; sdtrkd.; T.D. 3,232 ft.; 7-in. csg. 3,147 ft.; I.P. 75 B.P.D.; pmpg.
F. J. LeBlanc No. 1 Doiron, sec. 36-12s-10w. Drlg. sh. 3,690 ft.; no report.
Stanolind O. & G. Co. No. 8 Carter & Sweeney, sec. 22-12s-10w. R.U.
Stanolind O. & G. Co. No. 10 Carter & Sweeney, sec. 22-12s-10w. R.U.; (cor.).
Stanolind O. & G. Co. No. 54 State-Kelso, sec. 16-12s-10w. T.D. 5,825 ft.; P.B. 4,000 ft.; drlg. sh. 5,018 ft.
Superior Oil Co. No. 1 Benson-Vincent, sec. 30-12s-10w. T.D. 6,287 ft.
Texas Co. No. 24-B State, sec. 12s-9w. Sd. 7,668-95 ft.
Union Sulphur Co. No. 1 Doiron, sec. 37-12s-10w. T.D. 4,888 ft.; 7-in. csg. 4,876 ft.; heaving sh. 5,940 ft.; P.B. 3,572 ft.; sdtrkg. at 3,531 ft.; drlg. sh. 4,-350 ft.
York Oil Field Supply No. 3 Vincent, sec. 28-12s-10w. T.D. 2,947 ft.; P.B. 2,895 ft.; P.B. 2,848 ft.; to sdtrk.; T.D. 3,285 ft.; P.B. to 2,800 ft.; W.O.C.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 1 St. Mary Parish Ld. Co., sec. 37-17s-9e. 13⅜-in. csg. 1,837 ft.; cg. sh.&L. 10,752 ft.; cd. sd.; oil odor 10,655-95 ft.; T.D. 10,892 ft.; sd.; odor of oil; W.O. mud barge.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 2 Carter, sec. 38-13s-9e. T.D. 9,939 ft.; 7-in. csg. 9,937 ft.; T.D. 10,476 ft.; well tried to blow out; fsg.
Herton Oil Co. No. 1-A Roane Sugar Co., sec. 38-13s-9e. Drlg. 775 ft.

Jennings—Acadia Parish

H. Fotiades No. 2 Washington Opelousas, sec. 41-9s-2w. 16-in. csg. 106 ft.; drlg. L. 4,437 ft.
Gulf Ref. Co. No. 39 Arnaudit, sec. 47-9s-2w. T.D. 4,840 ft.; P.B. 2,585 ft.; T.D. 4,586 ft.; 9⅝-in. csg. 4,578 ft.; drlg. sd. rk. 6,251 ft.
Jolly Pet. Co. No. 2 McFarlain, sec. 41-9s2w. Drlg. sdy. sh. 6,937 ft.
Pet. Heat & Power Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. Drlg. sh. 1,530 ft.
Stanolind O. & G. Co. No. 19 Houssiere-Latrelle, sec. 47-9s-2w. T.D. 6,448 ft.; P.B. 6,135 ft. to strtn. hole; T.D. 6,979 ft.; P.B. 6,700 ft.; P.B. and sdtrkg. 7,-509 ft.
Superior Oil Co. No. 2 Julis Clement, sec. 46-9s-2w. Drlg. sh. 5,518 ft.
Superior Oil Co. No. 6 Jennings-Heywood, sec. 41-9s-2w. T.D. 6,056 ft.; fsg. P.B. and sdtrkd.; drlg. sh. 6,234 ft.
Superior Oil Co. No. 9 Leckelt, sec. 42-9s-2w. T.D. 7,281 ft.; fsg.
Superior Oil Co. No. 10 Leckelt, sec. 43-9s-2w. R.U.
Superior Oil Co. No. 11 Leckelt, sec. 42-9s-2w. T.D. 6,735 ft.; fsg.
Superior Oil Co. No. 12 Leckelt, sec. 42-9s-2w. Drlg. sh. 5,812 ft.
Superior Oil Co. No. 13 Leckelt, sec. 42-9s-2w. R.U.
Victor Weisse No. 1 Clement, sec. 46-9s-2w. Top salt 3,819 ft.; S.D. 3,938 ft. D.S. stk.; cg. 3,150 ft.

Lafitte—Jefferson Parish

Texas Co. No. 10 Lafitte, sec. 17-17s-24e. Drlg. sh.&L. 4,192 ft.
Texas Co. No. 3 Marrero Ld. Co., sec. 29-17s-24e. R.U.
Texas Co. No. 9 Rigolet-Cooperation Fur Co., sec. 29-17s-24e. Drlg. sh. 9,550 ft.

Lake Long—Lafourche Parish

Fohs Oil Co. No. 4 State, sec. 64-17s-19e. 10¾-in. csg. 2,707 ft.; cg. sh. 8,547 ft.

Lake Pelto—Terrebonne Parish

Texas Co. No. 19 State-Lake, sec. 17-23s-18e. T.D. 5,703 ft.; sdtrkd.; drlg. 6,260 ft.

Leesville—Lafourche Parish

Texas Co. No. 68 L.L.&E., sec. 27-21s-22e. Drlg. sh. 4,975 ft.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Wurzlow, sec. 32-19s-19e. T.D. 7,272 ft.; pulled in drk.
Union Prod. Co. No. 1 Fundenburk, Unit 1, sec. 50-19s-19e. Drlg. sh. 6,121 ft.

New Iberia—Iberia Parish

Wm. Helis No. 5 Bolivar, sec. 56-12s-7e. T.D. 4,337 ft.; salt; P.B. and sdtrkd.; T.D. 3,594 ft.; 7-in. csg. 3,100 ft.; swbg.
Wm. Helis No. 4 Schwing, sec. 56-12s-7e. T.D. 4,216 ft.; P.B.; sdtrkd.; drlg. sh. 3,375 ft.
Texas Co. No. 5 Duhe, sec. 26-12s-7e. Drlg. sh.&L. 3,710 ft.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 2 Habetz, sec. 45-8s-1e. Drk.
Humble O. & R. Co. No. 1 Smith, sec. 44-8s-1e. T.D. 8,293 ft.; W.O.C.
Humble O. & R. Co. No. 1 Traham, sec. 3-9s-1e. Drlg. sh. 9,520 ft.

Port Barre—St. Landry Parish

Texas Co. No. 22 Botney Bay Lbr. Co., sec. 4-6s-5e. T.D. 3,569 ft.; P.B. 3,405 ft.

Quarantine Bay—Plaquemines Parish

Gulf Ref. Co. No. 4 State, sec. 17-19s-17e. T.D. 5,700 ft.; 9⅝-in. csg. 5,560 ft. cg. sd.&sh. 8,277 ft.

Roanoke—Jeff Davis Parish

Humble O. & R. Co. No. 1 Williams, sec. 13-9s-4w. Drlg. sh. 2,060 ft.

Sorrento—Ascension Parish

Pan American Prod. Co. No. 9 United Ld. Co., sec. 15-10s-4e. T.D. 1,333 ft.; I.P. 16 B.P.H.; ¾-in. ck.

South Elton—Jeff Davis Parish

Stanolind O. & G. Co.-Amerada Pet. Corp. No. 3-B Calcasieu Natl. Bank, sec. 27-7s-3w. T.D. 9,154 ft.; conditioning hole; 9⅝-in. csg. 8,647 ft.; T.D. 13,000 ft.; run Schlumberger survey.

Starks—Calcasieu Parish

Capital Oil Co. No. 1 Lutcher-Moore, sec. 24-9s-13w. R.U.

Timballer Bay—Lafourche Parish

Gulf Oil Corp. No. 4 State, sec. 36-23-21e. R.U.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 858 fee, sec. 29-9s-10w. T.D. 5,027 ft.; P.B.; sdtrkd.; T.D. 5,131 ft.; rng. 7-in. csg.

Valentine—Lafourche Parish

Wm. Helis No. 1 Valentine-Sugars, Inc., sec. 2-17s-20e. T.D. 6,931 ft.; fsg.
Pan American Prod. Co. No. 1-B Community, sec. 58-17s-20e. T.D. 8,160 ft.; 7-in. csg. 7,790 ft.; abd.
Pan American Prod. Co. No. 16 Harang, sec. 7-17s-20e. T.D. 7,236 ft.; P.B. and sdtrkd.; T.D. 6,789 ft.; 7-in. csg. 5,-710 ft.
Pan American Prod. Co. No. 17 Harang, sec. 9-17s-20e. Drlg. sdy. L. 5,963 ft.

Venice—Plaquemines Parish

Tide Water Oil Co. No. 5 Manhattan Fruit Co., sec. 26-26s-30e. Top oil sd. 7,250 ft.; T.D. 7,300 ft.; P.B. 4,800 ft.; sdtrkd. at 4,813 ft.; cd. oil sd. 7,101-68 ft.; T.D. 7,290 ft.; 7-in. csg. 7,191 ft. perf. csg. 7,100-24 ft.; tstd. gas; perfg. 5,917-34 ft.
Tide Water Asso. Oil Co. No. 6 Manhattan Ld. & Fruit Co., sec. 26-21s-30e. Cd. sd. S.O. 5,950-65 ft.; cd. oil sd. 7,127-59 ft.; T.D. 7,202 ft.; 7-in. csg. 7,200 ft.; comp.; no ga.

Vinton—Calcasieu Parish

M. McLean No. 17 Gray, sec. 35-10s-12w. R.U.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 1 N. H. Hirsch, sec. 44-3s-2e. T.D. 9,040 ft.; top sd. 8,-974 ft.; I.P. 339 B.P.D.; ⅞-in. ck.
Continental Oil Co. No. 1 McDaniels, sec. 44-3s-2e. T.D. 9,030 ft.; rng. csg.
Continental Oil Co. No. 1 Opelousas, St. Landry Securities Co., sec. 44-3s-2e. Spd.
Continental Oil Co. No. 1 Tate, sec. 44-3s-2e. T.D. 9,062 ft.; P.B. 8,982 ft.; run 7-in. csg.
Continental Oil Co. No. 1 T. E. Vidrine, sec. 47-3s-2e. Drlg. sh.&L. 7,729 ft.

Welsh—Jeff Davis Parish

J. Massart No. 1 L. T. Mathews, sec. 27-9s-5w. T.D. 1,269 ft.; S.D.
Stanolind O. & G. Co. No. 1 W. B. Conover, sec. 20-9s-5w. 13⅜-in. csg. 2,-017 ft.; T.D. 7,311 ft.; abd.

Woodlawn—Jeff Davis County

Union Sulphur Co. No. 2 Calcasieu Natl. Bnk., sec. 12-9s-6w. T.D. 8,540 ft.; S.W. sd.

S. LOUISIANA WILDCATS

Acadia Parish

H. E. Dalton No. 1 Setting, sec. 17-7s-1w. T.D. 5,106 ft.; P.B. to approx. 500 ft.; T.D. 3,925 ft.; D.S. stuck.
Humble O. & R. Co. No. 1 Finch, sec. 22-10s-1e. 9⅝-in. csg. 7,474 ft.; drlg. sh. 9,579 ft.

Avoyelles Parish

G. C. Koch et al No. 1 Kelone, sec. 21-2n-3e. 10¾-in. csg. 987 ft.; drlg. sdy. L. 4,568 ft.

Beauregard Parish

Republic Prod. Co. No. 1 Lutcher-Moore Lbr. Co., sec. 10-13w-6s. 10¾-in. csg. 1,015 ft.; drlg. sh. 7,950 ft.

Calcasieu Parish

Sun Oil Co. No. 1 Lutcher-Moore Lbr. Co., sec. 1-8s-13w. Cg. sd.&sh. 5,468 ft.

Wheeler Oil Corp. No. 2 Sch. Ld., sec. 1-9s-7w. 15½-in. csg. 46 ft.; S.D. 641 ft.

Cameron Parish

Humble O. & R. Co. No. 1-B Miami Corp., sec. 7-14s-6w. 13⅜-in. csg. 2,150 ft.; drlg. sh.&L. 9,270 ft.

Superior Oil Co. No. 1 Sells, sec. 5-15s-8w. R.U.

Iberia Parish

Texas Co. No. 1 Bayless-Jones, sec. 58-12s-5e. Drlg. hd. sd.

Texas Co. No. 2-B Vermilion Bay, sec. 20-16s-5e. T.D. 9,101 ft.; P.B. and sdtrkd at 5,788 ft.; T.D. 7,020 ft.; P.B. 6,385 ft.; to sdtrk.; T.D. 7,623 ft.; P.B. 7,176 ft.; to sdtrk.; T.D. 7,348 ft.; 9⅝-in. csg. 7,263 ft.; W.O.C.

Jefferson Parish

Julius Szodomka No. 1 Carroll, sec. 12-12s-11e. Drlg. sh. 2,350 ft.

Lafayette Parish

Continental Oil Co. No. 1 Foreman, sec. 36-9s-3e. Drlg. hd. sd. 9,264 ft.

Rapides Parish

J. J. Farrell No. 1 W. P. Aertker, sec. 16-4n-1e. Drk.

Pointe Coupe Parish

Batchelor Oil Co. No. 1 Hackney, sec 28-3s-8e. 20-in. csg. 117 ft.; 13⅜-in. csg. 2,170 ft.; drlg. sh. 6,685 ft.

St. Bernard Parish

Gulf Ref. Co. No. 3 State Lake, Twp. 12s-15e. 13⅜-in. csg. 1,558 ft.

St. James Parish

Continental Oil Co. No. 1 Realty Operators, sec. 17-12s-17e. R.U.

St. Landry Parish

Nixon & Toombs No. 1 Boagni, sec. 41-6s-4e. Drlg. sh.&sdy. sh. 6,350 ft.

St. Martin Parish

Shell Pet. Corp. No. 1 Unit, sec. 11-14s-12e. Cg. sh.&sd. 10,000 ft.

Texas Co. No. 11 St. Martin Ld. Co., sec. 21-8s-7e. Bldg. drk.

St. Mary Parish

Pet. Heat & Power Co. No. 9, sec. 9-13s-9e. S.D. 3,009 ft.

Terrebonne Parish

Fohs Oil Co. No. 1 Buckley & Bourg, sec. 77-19s-17e. Drlg. sh. 10,315 ft.

Fohs Oil Co. No. 1 State, sec. 41-19s-19e. 18⅝-in. csg. 246 ft.; cd. sd. S.G. 6,894-6,915 ft.; T.D. 9,232 ft.; rng. 9⅝-in. csg.

Vermilion Parish

Magnolia Pet. Co. No. 1 J. B. Ferguson, sec. 5-12s-2w. Drlg. sd. and gravel 990 ft.

TEXAS

Week Ending April 2

GULF COAST FIELDS

Lockridge—Brazoria County

Gulf Oil Corp. No. 5 Carrie Baker, J. W. Hall Sur. No. 11. Drk.

Gulf Oil Corp. No. 6-A Wilkes and Smith, J. W. Hall Sur. No. 11. Perf. csg. 6,363-66 ft.; flwg. oil and wash wtr.

Hastings Field—Brazoria County

Humble O. & R. Co. No. 12 R. D. Haden, R. Hoppel Sur. T.D. 6,080 ft.; no ga.

Humble O. & R. Co. No. 8 W. H. Schindler, H.T.&B. Sur. No. 35. R.U.

Navarro-Humble O. & R. Co. No. 1-E W. F. Beers, Perry & Austin Sur. T.D. 6,104 ft.; comp.; no ga.

Producers Inv. Co. No. 5 C. H. Alexander, A.C.H.&B. Sur. No. 1. R.U.

Jay Simmons No. 4 C. H. Alexander, H. T.&B. Sur. No. 28. T.D. 6,100 ft.; comp.; no ga.

Stanolind O. & G. Co. No. 2 L. B. Bisbee, H.T.&B. Sur. No. 37. Cg. sd. 6,144 ft.

Stanolind O. & G. Co. No. 20 Drake, H. T.&B. Sur. No. 36. Drlg. sh. 4,311 ft.

Stanolind O. & G. Co. No. 8 Guido, H.T. &B. Sur. No. 36. T.D. 6,080 ft.; W.O.C.

Stanolind O. & G. Co. No. 1 R. J. Schmidt, H. Stevens Sur. Drlg. sh. 4,636 ft.

Old Ocean—Brazoria County

Harrison-Abercrombie No. 1 L. Augusburger, C. Breen Sur. R.U.

Harrison-Abercrombie No. 1 David Kaufman, C. Breen Sur. R.U.

Harrison & Abercrombie Oil Co. No. 1 Troyer and West Texas Abst. Co., C. Breen Sur. Drlg. sh. in sdtrkd. hole 9,065 ft.

West Columbia—Brazoria County

Adrian Moore No. 2 Gulf fee, George Tennille Sur. Cg. 5,516 ft.

Frost and Dunnan No. 1 E. S. Parker, Geo. Tennille Sur. Bldg. drk.

Mike Hogg No. 2 Varner, W. Varner Lge. Drlg. sh. 1,510 ft.

Sterling O. & R. Co. No. 1 Munson, G. Tennille Sur. T.D. 6,003 ft.; W.O.C.

Texas Co. No. 20-A Abrams, George Tennille Sur. Drlg. sh.&L. 5,230 ft.

Texas Co. No. 21 Abrams, Geo. Tennille Sur. Drlg. sh.&L. 3,550 ft.

Texas Co. No. 7 J. G. Phillips, George Tennille Sur. Drlg. sd.&sh. 5,905 ft.

Texas Co. No. 4 T. L. Smith, Geo. Tennille Sur. Drlg. sh.&sd. 6,335 ft.

Wallace Oil Co. and others No. 1 Hargrove, G. Tennille Sur. Drlg. sh. 4,620 ft.; no report.

Sandy Point—Brazoria County

J. A. Fite No. 1 fee, Blk. 45, D. Talley Sur. R.U.

Calhoun—Heyser—Victoria County

Blanco Oil Co. et al No. 9-C Dunwoody, A. Sisneros Sur. Cg. sh. 5,236 ft.

George Echols No. 5 O. M. Lander, J. E. Galban Sur. T.D. 5,748 ft.; reperf. csg.

Gulf Oil Corp. No. 4-B C. P. Traylor, J. Galban Sur. Drk.

Gulf Ref. Co. No. 3 L. P. Schultz, J. E. Galban Sur. R.U.

Magnolia Pet. Co. No. 7 Lander, J. E. Galban Sur. Drlg. sh. 2,610 ft.

Normandie Oil Co. No. 6 Cook, A. Sisneros Sur. Drlg. sh. 2,206 ft.

Seaport Oil Corp. No. 1 Mae Diener. R.U.

Sinclair Prairie Oil Co. No. 11 W. H. Bennett, A. Sisneros Sur. Cg. 5,710 ft.

Sinclair Prairie Oil Co. No. 12 W. H. Bennett, A. Sisneros Sur. R.U.

Cedar Bayou—Chambers County

Merit Oil Co. No. 1 Milam, C. Smith Sur. Drlg. sh. 4,156 ft.

Cedar Point Field—Chambers County

Humble O. & R. Co. No. 1 State, sec. 95. Drlg. sh. 2,330 ft.

Standard Oil Co. of Texas and Salt Dome Oil Co. No. 2 State, sec. 119. R.U.

Seabreeze—Chambers County

Sun Oil Co. No. 1 R. J. Barrow, A. Yarbo Sur. R.U.

Sun Oil Co. No. 2 Sea Breeze Land Co., sec. 102, H.T.&B. Sur. Drk.

Clinton—Harris County

Allamo Drlg. Co.-J. C. Means No. 2 Laura Lackner, H. Reinerman Sur. R.U.

Eureka—Harris County

Jack Frazier et al No. 1 Varner, Realty Co., J. Reinerman Sur. Drlg. sh. 3,226 ft.

Houston Oil Co. No. 2 Helberg-Lackner, J. Reinerman Sur. Drk.

Fairbanks—Harris County

H. C. Adams No. 1 J. P. Dawson, W. K. Hamblen Sur. Drlg. sh. 4,936 ft.

Amerada Pet. Corp.-Stanolind O. & G. Co. No. 1 L. M. Day, G. Ayers Sur. Drk.

Amerada Pet. Corp.-Stanolind O. & G. Co. No. 1 K. S. Silberg, G. Ayers Sur. Loc.

E. L. Smith and Ownby Drlg. Co. No. 2 L. M. Meyers, J. Ayers Sur. Cg. sh. 6,046 ft.

H. E. Williams No. 1 A. Vega, G. Williams Sur. 10¾-in. csg. 850 ft.; T.D. 6,836 ft.; 5½-in. csg. 6,835 ft.; perf. csg. 6,814-23 ft.; flwd. 8 B.P.H.; csg. collapsed; well abd.; skdg. drk.

Friendswood—Harris County

V. H. Borsodi No. 2 Berlowitz, Blk. 3, T. Choate Sur. Drlg. sh. 3,867 ft.

Humble O. & R. Co. No. 6 Beamer, T. Choate Sur. T.D. 1,049 ft.; W.O.C.

Humble O. & R. Co. No. 5 E. A. Grey, Perry & Austin Sur. 10¾-in. csg. 1,054 ft.

Humble O. & R. Co. No. 1 J. L. Jones, Perry & Austin Sur. Drk.

Humble O. & R. Co. No. 1-B Keisling & Dixon, T. Choate Sur. Drlg. sh. 3,225 ft.

Humble O. & R. Co. No. 2 J. H. Ross, T. Choate Sur. 10¾-in. csg. 1,075 ft.

Humble O. & R. Co. No. 1 E. E. Watson. Drk.

Humble O. & R. Co. No. 1-B O. P. Woodburn, A. Whitlock Sur. Loc.

LaBelle—Jefferson County

Sun Oil Co. No. 3 Broussard-Hebert, B. Blackman Sur. T.D. 8,622 ft.; sd.; S.G.

North Cheek—Jefferson County

Magnolia Pet. Co. No. 4 J. H. Phelan, A. Stivers Sur. R.U.

Hardin—Liberty County

Atlantic Ref. Co. No. 2 W. McMurtry, H. B. Johnson Sur. Drlg. sh.&L. 6,896 ft.

Fohs Oil Co. No. 1 Johnson, H. B. Johnson Sur. Cg. sdy. sh. 7,612 ft.

Jack Frazier No. 2-B Lynott-Buffam, J. Robeson Sur. Drlg. sh. 7,036 ft.

Gulf Oil Corp. No. 1 A. B. Tullos, H. B. Johnson Sur. Drk.

Halliburton Oil Prod. Co. No. 2 Hanchy, H. B. Johnson Sur. Spd.

Humble O. & R. Co. No. 1 Partlow, H. B. Johnson Sur. Drlg. sh. 2,630 ft.

Shell Pet. Corp. No. 2 Hanchy, H. B. Johnson Sur. Drk.

Tide Water Associated Oil Co. No. 1 A. Cessena, A. B. Hardin Sur. Drlg. sh. 2,930 ft.

L. W. Wickes No. 3 Tullos, H. B. Johnson Sur. Spd.

Bay City—Matagorda County

Hamman Expln. Co. No. 2 Crooke, E. Hall Sur. Top sd. 9,660 ft.; tstg.; no report.

Hamman Expln. Co. No. 2 G. M. Sloan, J. T. Belknap Sur. Drk.

Pan American Prod. Co. No. 1 Richers, I.&G.N. Sur. X-3. T.D. 9,689 ft.; 7-in. csg. 9,668 ft.; perf. csg. 9,310-20 ft.; tstg.

Palacios—Matagorda County

Sun Oil Co. No. 1 F. K. Robeson, L. Goodwin Sur. Drk.

Orange—Orange County

Gulf Oil Corp. No. 1 O. Duhon, Wm. Dyson Sur. Drlg. sh. 6,318 ft.

Ryan & Thompson No. 1 Walter-McGill, Wm. Dyson Sur. Cd. sd. and sdy. sh., oil odor, 5,683-5,732 ft.; D.S.T. failed.

Shell Pet. Corp. No. 1 E. V. Loeffler, Wm. Dyson Sur. T.D. 5,967 ft.; tstg.

Union Prod. Co. No. 2 Lutcher-Moore, Dyson Sur. 9⅝-in. csg. 5,162 ft.; drlg. sh. 6,838 ft.

Segno—Polk County

Gulf Oil Corp. No. 2 Ragan, I.&G.N. Sur. 15. T.D. 6,704 ft.; 9⅝-in. csg. 5,587 ft. cd. sd., odor oil and gas, 8,100-15 ft.; D.S.T. 8,108-17 ft. showed 10 lbs. pressure, 10 ft. oil, 30 ft. mud.

Humble O. & R. Co. No. 8-B Kirby, M. Victor Sur. Drlg. sh. 6,440 ft.

Spurger—Tyler County

Republic Prod. Co.-Houston Oil Co. No. 9 Hurd, N. Hurd Sur. Drlg. sh. 3,067 ft.

GULF COAST WILDCATS

Brazoria County

Pure Oil Co. No. 1 Clemons State Farm S. F. Austin 7½ Lge. 7⅝-in. csg. 1,955 ft.; T.D. 6,515 ft.; rmg.

Brazos County

Pet. Heat & Power Co. No. 1 Minnie C. Dunn, J. M. Barrera Sur. Drk.

Burleson County

Red Bank Oil Co. No. 1 Coffield, E. Sante Sur. Drlg. sh. 3,250 ft.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D. Smith Sur. Loc.

A. A. Cameron et al No. 1 White, Solmon Brill Sur. 10¾-in. csg. 1,500 ft.; drlg. sh. 6,865 ft.

Fort Bend County

Lomack Oil Co. No. 1 G. W. Armstrong, S. Miller Sur. No. 2. Drlg. sh. 5,626 ft.

J. R. Spencer No. 1 H. Boyle, Thomas Westfall Sur. Drlg. sh. 4,767 ft.

Galveston County

Sun Oil Co. No. 1 Cade, A. Dickinson. R.U.

Harris County

Chapman Mineral No. 1 O. Harris, Wm. Jones Sur. Drlg. sh. 3,467 ft.

W. S. Howell No. 1 Root, A. McCormick Sur. S.D. 2,807 ft.

O. W. Killam No. 1 J. J. Sweeney Est., G. Williams Sur. Recvd. 4 ft. of sd., oil odor, 6,535-50 ft.; cg. 6,657 ft.

West Prod. Co. No. 1 G. W. Sowden, J. Lindsey Sur. Cd. oil sd. 5,850-92 ft.; T.D. 6,030 ft.; 7-in. csg. 6,005 ft.

Jasper County

John Mayo No. 1 Cartwright, Legrande Sur. Drk.

Jackson County

Humble O. & R. Co. No. 1 J. R. Davis, I.&G.N. Sur. No. 20, Blk. 150. Drk.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico. T.D. 5,840 ft.; D.S. stk.; pulled in two; S.D.; may abd.

Humble O. & R. Co. No. 1 State, Gulf of Mexico, sec. No. 8. T.D. 115 ft.; S.D.

Matagorda County

J. K. Dorrance No. 1 M. Adamcik, I.&G N. Sur. No. 1. Drlg. sh. 4,796 ft.

Pierce Est. et al No. 1 Paul Kruger Nel. C. Warren Sur. T.D. 7,383 ft.; P B.; sdtrkd.; S.D. 6,708 ft.; perf. csg. 6,692-95 ft.; tstd. S.W.

Sun Oil Co. No. 1 Fred Robbins, C. F Vandeveer Sur. T.D. 10,160 ft.; well tried to blow out; rmg.

Polk County

C. E. Gates No. 2 I. O. Jackson, J. W Abbey Sur. Drk.

San Jacinto County

J. W. Oliphant No. 1 Gibbs, Chas. Memim Sur. Bldg. drk.

Waller County

Stanolind O. & G. Co. No. 1 Freeman, H.&T.C. Sur. No. 99. M.I.M.

Wharton County

Strake Pet. Corp. et al No. 1 W. N. Poole, H. J. Fry Sur. 10¾-in. csg. 1,484 ft.; cg. sh. 6,639 ft.

S. W. TEXAS WILDCATS

Atascosa County

W. M. Allison No. 1 Nieschwietz, J. De La Garza Sur. 216. S.D. 250 ft.

S.W.R. Corp. No. 1 Miller, J. Neill Sur. S.D. 435 ft.

Bastrop County

J. W. Bibb No. 1 Lentz, F. Wilkenson Sur. Top Austin Chalk with odor of oil 2,530 ft.; 5½-in. csg. 2,443 ft.; S.D. 2,550 ft.

R. C. Franklin No. 2 Yarrington, Jose Manuel Bangs Sur. S.D. 110 ft.

Humble O. & R. Co. No. 1 Hellsman, J. Cunningham Sur. 16-in. csg. 150 ft.; 10¾-in. csg. 1,599 ft.

Western Gulf Pet. Co. of Houston, Martin Wells Sur. Drlg. sh. 850 ft.; no report.

Bee County

Luling O. & G. Co. No. 1 Page, B. Q. Hadley Sur. Drlg. sh. 3,597 ft.

Bexar County

Culver & Bender No. 1 Peterson, H. Virm Sur. T.D. 1,285 ft., L.; swbd. some oil; hole bridged; abd.

Ralph Fair No. 1 Godda, J. H. Pickens Sur. T.D. 1,227 ft.; pmpg. 4 B.P.D.

Harrison et al No. 1 Schuwerth, Jose Antonio De La Garza Sur. S.D. 1,034 ft.

Hikok & Reynolds No. 1 Eivert, Thomas York Sur. T.D. 1,670 ft.; 7-in. csg. 1,142 ft.; T.D. 3,004 ft.; abd.

Joe H. Noake No. 1 Oppenheimer, W. Miller Sur. No. 180. 10-in. csg. 17 ft.; drlg. 170 ft.; no report.

Caldwell County

Mac-Wag-Tree Oil Co. No. 1 Roberts, W House Sur. 5½-in. csg. 2,517 ft.; T.D. 2,713 ft.; swbd. well; flwd. sulfur wtr. P.B. to test.

Mencill Pet. Co. No. 1 J. Wallinger, Gedeon Pace Sur. Drlg. 710 ft.; corrected.

C. R. Richardson No. 1 Schowe, T. Maxwell Sur., Abst. 188. T.D. 629 ft.; fsg.

Cameron County

Saxet Prod. Co. No. 1 Port Isabel Irrig Co. Sur. 30. Drk.

De Witt County

Howeth et al No. 1 H. Fuhrken, J. H. Walton Sur. R.U.

Dimmitt County

Teas & Maryland Corp. No. 1 McKnight, Blk. 13, sec. 23, Base of Austin Chalk 5,201 ft.; top Georgetown L. 6,120 ft. T.D. 7,116 ft.; S.D. for csg.; hole cleaned to 2,800 ft.; showed gas; cleaned to bttm.; no showing; S.D.

Duval County

Conroe Drlg. Co. No. 1 A. Trevino, J. Poitevent Sur., sec. 1. T.D. 4,701 ft.; abd.

Corpus Christi Ref. Co. No. 1 Parr, B. S.&F. Sur. 303. Spd.

Frank Gravis No. 1 Megargal, J. Boyle Sur. 10-in. csg. 500 ft.; drlg. plug.

Magnolia Pet. Co. No. 1 Duval Co. Rnch. Co., C.C.S.D.&R.G.N.G. Sur., sec. 87. Drlg. sh. 2,036 ft.

Magnolia Pet. Co. No. 1 W. K. Hoffman, sec. 111, S.A.&M.G. Sur. Cg. sh. 5,280 ft.

Mills Bennet-Stanolind O. & G. Co. No. 1-A Yates, J. Poitevent Sur. No. 321. 10¾-in. csg. 196 ft.; drlg. sh. 2,080 ft.

Rowan & Hope No. 1 C. K. Gravis, sec. 90. Drlg. sh. 4,127 ft.

G. Stratton No. 1 Afflerback, H. G. Foster Sur. R.U.

Sun Oil Co. No. 1 Ross, A.B.&M. Sur. R.U.

Taylor Ref. Co. No. 1 Parr, B.S.&F. Sur. Drlg. sh. 2,908 ft.

P. T. Wright No. 1 Hyatt, Sweden Farm Lots Subd. R.U.

Edwards County

Dan Auld No. 1 Henderson, sec. 46, Blk E. 7-in. csg. 1,865 ft.; T.D. 4,224 ft.; abd.

Goliad County

Windward Oil Co. No. 1 Dreier, B.S.&F Sur. No. 7. 10-in. csg. 1,000 ft.; T.D. 3,637 ft.; D.S.T. 3,632-37 ft.; blew out

LEGAL

U. S. Department of the Interior, General Land Office, Washington, D. C. Notice is hereby given that the following lands are offered to the responsible qualified bidder of the highest bonus per acre, for leasing pursuant to section 17 of the act of February 25, 1920 (41 Stat. 437), as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in Circular 1386: Carterville-Sarepta Oil and Gas Field, lot 2 Sec. 2, lot 4 Sec. 4, lots 3 and 4 Sec. 5, T.22 N., R. 11 W., SE¼ NW¼ Sec. 31, T. 23 N., R. 11 W., La. M., 99.77 acres; Rodessa Oil and Gas Field, Unit No. 3, NW¼ SE¼ Sec. 5, T. 23 N., R. 15 W., 28.93 acres; Unit No. 4, SW¼ NE¼ Sec. 2, T. 23 N., R. 16 W., 27.96 acres. The sale will be held in the Federal Court Room, Post Office Building, Shreveport, Louisiana, at 12:00 noon on April 11, 1938. The successful bidder must deposit on the day of the sale a certified check on a solvent bank, or cash, for 1/5 of the amount of each bid, and file the showing of qualifications to receive a lease required by section 7 of General Land Office Circular No. 1386. The remaining 4/5, together with the annual rental in advance, at the rate of $1 per acre, must be paid prior to the issuance of the lease. The bidders are warned against violations of the provisions of section 59 of the U. S. Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Fred W. Johnson, Commissioner.

while drlg. 5,530 ft.; rng. wild; killed; B.P.; sdtrkd. 1,508 ft.; drlg. sh. 1,725 ft.

Guadalupe County

Benstrasser No. 1 Eickenroht, A. Marrs Ennaurrezar Sur. R.U.

E. A. Hearn et al No. 1 Dudelof, Jas. A. Clements Sur. S.D. 720 ft.

N. G. Spiller No. 1 Wright Highsmith 5½-in. csg. 2,012 ft.; T.D. 2,290 ft.; corrected; pmpd. 80 bbls. of acid, wtr. and oil in 23 hrs. and pmpd. dry; prep to reacdz.

Hidalgo County

Gulf States Oil Co. No. 1 Cardenas, Juan Jose Balle Sur. 10¾-in. csg. 1,689 ft.; cg. sd.&sh. 7,193 ft.

Hidalgo Prod. Co. No. 1 Daskam Corp., Porc. 45, Blk. 34. T.D. 1,507 ft.; drlg. sh. 1,507 ft.

Jim Hogg County

F. S. Adams No. 1 Martinez, sec. 623. Drlg. 2,610 ft.

Jim Wells County

E. Calloway No. 1 Garcia, R. E. L. King Sur., sec. 54. Drlg. sh. 6,005 ft.

H. H. Howell et al No. 1 Lindsey & Reed, Lavaca Gr. Sur. T.D. 3,771 ft.; P.B. 3,451 ft.; attempted 3 D.S.T.'s; all failed.

Magnolia Pet. Co. No. 8 Seeligson, A. Rameriz Sur. 13⅜-in. csg. 1,206 ft. 9⅝-in. csg. 6,155 ft.; T.D. 6,593 ft.; 7-in. csg. 6,576 ft.; flwg. 22 B.P.H.; ¾-in. ck.

Homer Presnall et al No. 1 Banker Mortgage Co., Jose Maria Garcia Sur. Cg. sdy. sh. 3,440 ft.

Rowan & Hope No. 2 Adams, T.&N.O. R.R. Sur. T.D. 3,252 ft.; perf. csg. 3,-215-20 ft.; flwd. 160 bbls. in 12 hrs.; ¼-in. ck.

Kleberg County

Pure Oil Co. et al No. 1 State Ld., Tr. 68, Laguna Madre Bay, Lse. No. 52e Dredging canal.

La Salle County

Finley S. Ewing No. 1 Pugh, E. L. Garrett Sur. R.U.

Lee County

Elecoussa Oil Co. No. 1 Sanders, J. Vin Roeder Sur. S.D. 4,398 ft. in L.

Live Oak County

J. B. Deal et al No. 1 E. B. Herring, Stephen Hays Sur. 10¾-in. csg. 61 ft.

Louis Franklin No. 1 Russell, John Hefferman Sur. R.U.

Hantho-Nelson No. 1 Geo. West, G. L. Haas Sur. R.U.

Harvey-Henderson No. 3 Nichols, Blk. 27. Drlg. sdy. sh. 542 ft.

Karotkin & Richardson No. 1 Pape, Wm. R. Conner Sur. T.D. 2,755 ft.

Ray L. Martin No. 1 Adams, J. Buchannan Sur. T.D. 965 ft.; (cor.).

J. I. Newton No. 1 George West Est., Airy Pieratt Sur. No. 129. Drlg. rk. 1,959 ft.

V. G. Schimmel et al No. 1 Geo. West,

LEGAL

United States Department of the Interior, General Land Office, Washington, D. C. Notice is hereby given that the following lands and oil and gas deposits adjacent to or within the known geological structure of the West Red River and Middle Red River oil and gas fields, Tillman County, Oklahoma, are offered to the responsible qualified bidder of the highest bonus pursuant to Section 5 of the act of March 4, 1923 (42 Stat. 1448), and Section 17 of the act of February 25, 1920 (41 Stat. 437), as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in General Land Office Circular No. 1386: Unit No. 1, containing approximately 17 acres; Unit No. 2, containing approximately 24 acres; Unit No. 3, containing approximately 64 acres; and Unit No. 4, containing approximately 150 acres. Bids will be received on the separate units but two or more units awarded to the same purchaser may be included in a single lease. Specifications showing the location and description of the units may be obtained from the General Land Office, Washington, D. C., or the United States Geological Survey, Wichita Falls, Texas. The sale will be held in the office of the Petroleum Engineer, Geological Survey, Federal Building, Wichita Falls, Texas, at 12:00 noon on May 9, 1938. The successful bidder must deposit on the day of the sale a certified check on a solvent bank, or cash, for 1/5 of the amount of each bid, and file the showing of qualifications to receive a lease required by section 7 of Circular 1386. The remaining 4/5, together with the annual rental in advance, at the rate of $1 per acre, must be paid prior to the issuance of the lease. The bidders are warned against violations of the provisions of section 59 of the U. S. Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. The remaining lands and deposits in the bed of Red River extending from the north fork of the river to the 98th Meridian, west longitude, are subject to disposition in accordance with the Order of the Secretary of the Interior fixing April 1, 1938, as the opening date. Commissioner.

G. L. Haas Sur. S.D. 210 ft.; prep. to D.D.

Unit Pet. Co. No. 1 Terrell, Mark Kelley Sur., Abst. 20. T.D. 1,650 ft.; S.D.

McMullen County

Duncan Drlg. Co. No. 1 Martin Henry, sec. 6. S.D. 707 ft.

Hear & Hall No. 1 Byrne, G. Pittich Sur. Drlg. 70 ft.

Medina County

F. A. Brown No. 1 Senne, A.C.H.&B. Sur. 105. R.U.

J. W. Cromwell No. 1 J. W. Tondre, I. J. Rogers Sur. Drlg. sh. 379 ft.

D. K. J. Oil Co. No. 1 Burrell. T.D. 2,-039 ft.; S.D. after swbg. dry.

F. J. Dykstra No. 2 McMenemy, G. Petty Sur. R.U.

Ewing Oil Co. No. 1 Riff, Sur. 42. Cg. Serp.; good show oil; T.D. 600 ft.; prep. to core ahead.

Gee Hayes et al No. 1 Conrad, J. Keppler Sur. Drlg. 60 ft.

Taylor & Pepper No. 1 Saathoff, Peter Eichorn Sur. Drlg. 60 ft.

J. R. Trentman et al No. 1 Carle Merc. Co., V. A. Johnson Sur. T.D. 1,905 ft.; rmg.

M. L. Walker No. 1 Zuberbulen, A. Bonamy Sur. R.U.

Milam County

Texedo Oil Co. No. 1 Graham, Charles Cornea Sur. Logged S.O. 1,135-36 ft.; S.D. 1,720 ft.; L.

Texedo Oil Co. No. 1 Paul Garves, C. Robertson Sur. S.D. 1,170 ft.

Nueces County

Corpus Christi Ref. Co. No. 1 J. R. Howington, O. and M. Oliver Sur. No. 156. 10¾-in. csg. 527 ft.; T.D. 5,385 ft.; prep. to sdtrk.

Renwar Oil Corp. No. 1-A Kennedy, D. Martinez Sur. Drlg. sh. 5,260 ft.

Richardson Pet. Co. No. 2 H. B. Baldwin, E. Villareal Sur. No. 1. T.D. 7,-466 ft.; abd.

Refugio County

Hogan Oil Co. No. 2 Kelly, J. Powers Sur. T.D. 5,831 ft.

H. J. Porter et al No. 1 Lambert, J. Powers and Hewitson Sur. R.U. and S.D.

San Patricio County

A. L. Bob No. 2 Green, T. T. Williamson Sur. S.D. 7,100 ft.

Humble O. & R. Co. No. 1 Smith and Talbert, Lot 2, sec. 37. Cd. sd. S.O.&G. 4,804-17 ft.; recvd. 550 lbs. pressure on D.S.T.; rmg. for record test.

G. E. Smith No. 1 French, Henry S. Day Sur. S.D. 5,713 ft.

Starr County

O. C. Borah No. 1 P. G. Garcia, Juan Salinas Sur. Drlg. 294 ft.

O. C. Borah No. 7 Martinez, Joaquin Salinas Sur. Drlg. 220 ft.

J. L. Collins No. 1 Francisco B. Guerra Santa Cruz Gr. T.D. 6,609 ft.; well blew out; cutting out D.P.

C. H. Lewis No. 1 Guerra, Juan Leal Sur. Drlg. sh. 821 ft.

Scaraborough et al No. 1 Haden, Jose De La Garza Sur. R.U.

Sun Oil Co. No. 2-D Guerra, La Sacatosa Gr., 2 mi. SW of Cuevitas field. T.D. 2,220 ft.; abd.

Travis County

Texas Empire Trading Co. No. 1 E. E. Jourdan, Santigo Del Valle Gr. Drk.

Victoria County

W. V. Bowles No. 2 Robertson, T. C. Burnham Sur. Loc.

Superior Oil Co. and L. A. Gillespie No. 1 J. Carroll, J. F. Johnson Sur. T.D. 5,508 ft.; abd.

Webb County

C. C. Bonner No. 1 Lewis, W. P. Rutledge Sur. 460. Loc.

French Oil Co. No. 4 Benavides, G.C.S. D.&R.G.N.G. Sur. 1121. Cg. 2,138 ft.

W. S. Hill No. 1 Adami, A.B.&M. Sur. 345. S.D. 1,205 ft.

Randon Oil Co. No. 1 Swift, Sur. 746. S.D. 1,604 ft.

Willacy County

Magnolia Pet. Co. No. 1 Armendaiz, San Juan DeCarricitos Gr., Sh. 4. T.D. 9,-643 ft.; 8⅝-in. csg. 9,640 ft.

Salvieja Oil Corp. No. 2 Garcia Ld. Co. Blk. 118. Cg. sd., oil odor, 7,908 ft.

Williamson County

Marion Aldridge No. 1 Kroschewsky. T.D. 1,033 ft.; S.D.

Zapata County

R. B. Bryant No. 1 Flores, La. Huerta Sur. Drlg. sdy. sh. 1,337 ft.; no report.

Falcon Oil Co. 1⅛ Aquire, Sh. 28-A. T.D. 2,274 ft.

EAST TEXAS

(Border Counties)

Rodessa—Cass County

Bay Oil Co. No. 2 E. Parker, G. Crowder Sur. Set 7-in. csg. 6,010 ft.; comp.; 30 B.P.D. on ⅛-in. ck.; T.P. 0; C.P. 320 lbs.; T.D. 6,068 ft.

G. H. Chamblee No. 1 White & Walker, R. Potter Sur. T.D. 6,201 ft.; P.B. 6,-153 ft.; to D.S.T.

Bowie County

King Oil Corp. No. 1 Watts, Geo. Brinlee Sur. Fsg. 4,000 ft.

Harrison County

Ark.-La. Gas Co. No. 1 C. M. Abney, E. Little Sur. T.D. 4,820 ft.; set 7-in. csg. 2,350 ft.; drlg. 3,946 ft.

Marion County—Rodessa

Ark.-La. Gas Co. No. 1 Hill, Gillespie Sur. Drlg. anhy.&L. 5,656 ft.

Arkansas-Louisiana Gas Co. No. 1 Hollands, Hanks Sur. Set 7-in. csg. 6,092 ft.; T.D. 6,121 ft.; P.B. 6,112 ft.; tstd. S.W.; perf. 7-in. csg. 6,090-95 ft.; tstd. S.W. and S.O.&G.; sqzd. 6,121-6,100 ft.; drld. out to 6,106 ft. and tstd. dry; acdzd. 1,500 gal.; tstd. S.W.; cd. to 6,-131 ft.; W.O.

Ark.-La. Gas Co. No. 2 Holland, Hanks Sur. Drlg. L.&sh. 4,958 ft.

Ark.-La. Gas Co. No. 1 Howard, Thos. Gillespie Sur. Set 7-in. csg. 6,000 ft.; T.D. 6,030 ft.; tstd. S.O. after 1,500-gal. acid; tstg.

Ark.-La. Gas Co. No. 1 Pitts, C. Lockhart Sur. Hill sd. 5,918-21 ft.; tstd. est. 30,000,000 ft. gas; 300 ft. of fluid in hole; B.H.P. 2,400 lbs.; drlg. ahead 6,231 ft.

Dunn & Fisher No. 1 Neilson, Gentry Sur. Comp.; 15 B.P.H. on ⅞-in. ck.; 5½-in. at 6,065 ft.; T.D. 6,090 ft.

Dunn & Fisher No. 1 G. F. Whitfield, Bennington Sur. Set 5½-in. csg. 6,048 ft.; tstg.; T.D. 6,085 ft.

Geo. Echols No. 2 Whitfield, Bennington Sur. Drlg. 2,047 ft.

Gulf Oil Corp. No. 2 Grubaugh, Coy Sur. Drlg. L. 3,760 ft.

Gulf Oil Corp. No. 4-A Henderson, Bennington Sur. Drlg. sh.&L. 3,426 ft.

Heyser, Heard & Clardy No. 1 Brantley, Bennington Sur. T.D. 6,018 ft.; comp.; W.O.; ga.; set 5½-in. csg. 5,-996 ft.

Heyser, Heard & Clardy No. 2-B Henderson, Ewing Sur. Fsg. D.S. 5,971 ft.

Hollandsworth Drlg. Co. No. 1 Graham, Hanks Sur. Drlg. 2,710 ft.

Ohio Oil Co. No. 1 Mosley, Francis Sur. Drlg. 2,525 ft.

Phillips Pet. Co. No. 1 Benefield, Hanks Sur. Top Gl. 6,018 ft.; 7-in. csg. 6,117 ft.; T.D. 6,125 ft.; comp.; 363 B.P.D. on ¼-in. ck.; perf. 6,019-30 ft.

Phillips Pet. Co. No. 1 Henderson, Gillespie Sur. Set 7-in. csg. 6,039 ft.; T.D. 6,075 ft.

Rice Drlg. Co. No. 1 Haynes, Coy Sur. Drlg. sh. 2,879 ft.

J. C. Robbins et al No. 1 J.&N.W. Ry., Bennington Sur. Drlg. sh.&L. 5,897 ft.

Shell Pet. Corp. No. 1 Goodrow, Hanks Sur. R.U.

Shell Pet. Corp. No. 1 Schluter, W. Smith Sur. Drlg. sh.&L. 5,476 ft.

Shell Pet. Corp. No. 1 Whelan, Thos. Gillespie Sur. Set 5½-in. csg. 5,966 ft.; T.D. 5,993 ft.; swbd. S.O.; to acd.

Union Prod. Co. No. 6 Hutchinson, Coy Sur. Set 7-in. at 6,096 ft.; T.D. 6,107 ft.

Union Producing Co. No. 7 Hutchinson, Coy Sur. Drlg. sh. 5,223 ft.

Panola County

Texas Co. No. 1 Claude Adams, T. Cox Sur. T.D. 5,940 ft.; set 9⅝-in. csg.; drlg. 6,757 ft.

Shelby County

Joe Burnham No. 1 George, Tutt Sur. Drlg. 3,466 ft.

WEST TEXAS WILDCATS

Andrews County

J. Donnelly et al No. 1 University, sec. 16, Blk. 14, University Sur. Drlg. 2,950 ft.

Humble O. & R. Co. No. 1 Kuykendall, sec. 24, Blk. 46-A, P.S.L. Sur. Comp. 16 B.O.P.D., 4,473-4,511 ft.

Rogers & Rogers No. 1 O. B. Holt, P.S.L. Sur. C.O. 4,541 ft.

Seaboard Oil Corp. No. 1 Munger-Nix, sec. 1, Blk. A-4, P.S.L. Sur. Drlg. 3,785 ft.

Seaboard Oil Corp. No. 1 Thornberry, sec. 8, Blk. 42-A, P.S.L. Sur. Drlg. 3,785 ft.

H. C. Wheeler No. 1 T. M. Gardner, sec. 15, Blk. A-35, P.S.L. Sur. Drlg. 3,085 ft.

Bailey County

Duffey & Etz No. 1 Enochs, Tract 66, League 182, Floyd Co. School Lands Sur. Fsg. 4,160 ft.

Brewster County

F. C. Dodson No. 1 Texas American Synd sec. 66, Blk. 10, G.H.&S.A. Sur. Drlg. 7,751 ft.

Cochran County

Texas Co. No. 1 Mallett Ld. & Cattle Co., sec. 7, Blk. G, P.S.L. Sur. Drlg. 4,670 ft.

Coke County

Barnett Pet. Co. No. 1 J. R. Mims, sec. 3, Blk. W, T.&P. Sur. S.D. 2,800 ft.

Crockett County

W. L. Bradley et al No. 1 Hoover, sec. 1, Blk. 1. Drlg. 1,210 ft.

Choate & Hogan No 1. University, sec. 17, Blk. 14, University Sur. Drlg. 1,502 ft.

Moore Bros. No. 1 Perner, sec. 3, Blk. 2, I.&G.N. Sur. Drlg. 9,086 ft.

W. F. Yates No. 1 Hoover, sec. 6, blk. 1, G.C.&S.F. Sur. R.U.M.

Culberson County

Harry J. W. Nichaus No. 1 C. M. Caldwell, sec. 15, Blk. 109, P.S.L. Sur. Fsg. 595 ft.

Dickens County

J. F. Marrisey No. 1 I. J. McMahan, sec. 319, Blk. 1, H.&G.N. Sur. S.D. 450 ft

Ector County

Stogner et al No. 1 Hendrick, sec. 4, Blk. 43, T.&P. Sur. Drlg. 1,125 ft.

Edwards County

Lyles & Dan Auld No. 1 Henderson, H.E. &W.T. Sur. S.D. 3,200 ft.

Richmond Drlg. Co. No. 1 Brown, G.W. T.&P. Sur. S.D.O. 5,750 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. Running 4-in. 3,571 ft.

Fisher County

Daniel & Rhodes No. 1 Nichless, Geo. W. Lawrence Sur. S.D. 3,340 ft.

Floyd County

Mills Bennett No. 1 T. Montgomery, F. J. Latham Sur., 6 mi. S of Floydada. Drlg. 3,100 ft. by side whipstock.

Gaines County

Continental No. 1-45 Moore, sec. 45, Blk. AX, P.S.L. Sur. Comp., 561 B.O. P.D. 4,825-4,975 ft.

Eastland Oil Co. No. 1 R. C. Dunbar, sec. 24, Blk. A-12, P.S.L. Sur. S.D. 3,815 ft.

M. B. K. Drlg. Co. No. 1 A. L. Wasson, sec. 52, Blk. AX, P.S.L. Sur. Drlg. 3,350 ft.

Garza County

Gulf Oil Corp. No. 1 Swanson, sec. 25, Blk. 2, H.&G.N. Sur. Drlg. 2,510 ft.

Glasscock County

O. B. Greathouse No. 1 Burns, sec. 221, Blk. 29, W.&N.W. Sur. M.I.S.T.

Hockley County

Gulf Oil Corp. No. 1 M. G. Gordon, sec. 12, Blk. X, P.S.L. Sur. Prep. P.B. 5,062 ft.

Gulf Oil Corp. No. 1 Mallett Ld. & Cattle Co., sec. 6, Blk. X, P.S.L. Sur. Prep. P.B. 5,105 ft.

Honolulu Oil Co. No. 1-51 Dorthy Slaughter, Labor 51, League 37, Zavalla Co. Sch. Lds. Comp., 917 B.O.P.D. 4,891-4,973 ft.

Honolulu Oil Co. No. 1-77, Labor 77, League 37, Zavalla Co. Sch. Lds. Set 7-in. 4,740 ft.

Howard County

Lockhart Oil Co. No. 1 Hussinger, sec. 67, Blk. 29, W.&N.W. Sur. P.B. 2,875 ft.

Moore Bros. No. 1 W. P. Edwards, sec. 44, Blk. 30, T.&P. Sur. Prep. drill 1,635 ft.

Texas Co. No. 1 H. H. Wilkinson, sec. 32, Blk. 34, T.&P. Sur. Drlg. 1,270 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp 6 Set 7-in. 4,194 ft.

Haymon Krupp No. 1 Briggs, sec. 24, Blk. 73, Twp. 7, T.&P. Sur. U.R.

Jeff Davis County

Joiner Oil Corp. No. 1 Jones-Coffield. S.D. 3,520 ft.

Kent County

Thad A. Bryant Jr. No. 1 Haggins et al, sec. 118, Blk. 1, H.&G.N. Sur. Bldg. drk.

Thad A. Bryant, Jr., No. 1 House, sec. 10, Blk. 1, H.&G.N. R.R. Sur., 6,000-ft. test. S.D. 200 ft.

Kerr County

A. E. Edmiston et al No. 1 J. H. Saul, sec. 47, T.W.N.G. Sur. Spdg.

Loving County

Bryant-Caraway et al No. 1 House, Pre-Emption Sch. Lds., sec. 10. Setting surface csg.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., sec. 151, H.E.&W.T. Sur. S.D.O. 4,415 ft.

Martin County

Harris-Anderson Oil Corp. No. 1 Mollie Robinson, sec. 33, Blk. 38, T.&P. Sur. S.D. 4,189 ft.

Menard County

G. A. Clements No. 1 Murchison, sec. 80, B.S.&S. Sur., 8 mi. E of Menard. S.D.O. 1,320 ft.

C. D. Haggerty No. 1 Callon, sec. 36, Jim Franz Sur. Run. 10-in. 430 ft.

Pecos County

Ed Falney No. 1 Trees, sec. 63, Blk. 8, H.&G.N. Sur. Fsg. 2,055 ft.

Magnolia Pet. Co. No. 1 McKee. S.D. 5,444 ft.

E. R. Minshall et al No. 1 Haynie, sec. 28; Blk. 146, T.&St.L. Sur. M.I.M.

S. Thompson No. 1 Elsinore Cattle Co., sec. 54, Blk. D, G.C.&S.F. Sur. Fsg. 7,212 ft.

Trans-Pecos Oil Co. No. 1 Gallagher. T.&P. Sur. Drlg. 1,940 ft. last report.

Trans-Pecos Oil Co. No. 3-A Papham, G.H.&S.A. Sur. U.R. 2,024 ft. last report.

Wilcox O. & G. Co. No. 1 Serf, sec. 27. Blk. 130, T.&St.L. Sur. Drlg. 3,630 ft.

Presidio County

L. C. Brite No. 4 fee, C NW¼ sec. 113, Blk. 12, G.H.&S.A. Sur. Drlg. 4,670 ft.

Reeves County

Grisham Hunter Corp. & N. A. Grisham No. 1 Geo. Daniel, sec. 40, Blk. 58, T.&P. Sur. Drlg. 1,235 ft.

Ohio Oil Co. No. 1 Papham, sec. 18, Blk. 54, T.&P. Sur. Drlg. 2,370 ft.

Runnels County

E Z Oil Co. No. 1 B. Fletcher, E. C. Good Sur. T.D. 4,394 ft.; P.B. to 4,360 ft.; S.D.O. 4,384 ft.

Stevens & Glober No. 1 Fowler, sec. 150, E.I.R.R. Sur. Drlg. 1,230 ft.

Schleicher County

J. M. Cooper No. 2 B. Page, sec. 40, Blk. L, G.H.&S.A. Sur. S.D. 5,004 ft.

Tex-Tor Oil Corp. No. 1 Judkins & Spencer, C of SW¼ sec. 33, Blk. A, A.&B. Sur. Drlg. 6,320 ft.

Scurry County

Robinson Drlg. Co. No. 1 Martin, sec. 147, H.&T.C. Sur. S.D. 3,513 ft.
T. G. Shaw Oil Co. No. 1 First Natl. Bank. Fsg. 2,420 ft.

Sterling County

Loffland Bros. & Moore Bros. No. 1 D. D. Parramore, sec. 23, Blk. 2, H.&T.C. Sur. R.U.S.T.
J. W. Sward No. 1 Brennand, sec. 107, Blk. 2, H.&T.C. Sur. S.D. 968 ft.

Stonewall County

Bert Fields No. 1 J. M. Lee, J. E. Pierson Sur. Spd.&S.D.
General Crude Oil Co. No. 1 J. D. Smith, sec. 371, Blk. 2, H.&T.C. Sur., 12 mi. N Rotan. Rng. 10-in. 3,505 ft.
Swanson & Parriott No. 1 H. T. Carlisle, sec. 293, BlR. D, H.&T.C. Sur. Drlg. 3,408 ft.

Terrell County

D. & S. Oil Co. No. 1 Sam Bell. S.D. 960 ft.

Tom Green County

Humble O. & R. Co. No. 1 Lewis & Ward law, sec. 5, Blk. 17, H.&T.C. Sur. Cg. 7,198 ft.
Southern Cross Oil Co. No. 1 J. W. Wilson, sec. 30, Blk. H, A.B.&M. Sur. Loc.
Spinner No. 1 Reed, Mason Ferry Ranch Sur. S.D.O. 3,900 ft.

Upton County

Holland & Maverick No. 1 Halff, sec. 6, Blk. A, C.C.S.D.&R.G.N.G. Sur. Drlg. 2,633 ft.
W. D. Riser et al No. 1 King Ranch Oil & Lignite Co., sec. 8, Blk. 3, M.K.&T. Sur. S.D. 730 ft.
J. S. Pitman No. 1 D. Elder, C.C.S.D.& R.G.N.G. Sur., Blk. 3, sec. 14. Comp.; D.&A. at 3,065 ft.

Val Verde County

J. F. Carter et al No. 1 Seller & Sons, sec. 34, Blk. A, I.&G.N. Sur. Spd. and S.D.

Ward County

Cities Service No. 2 Brandenburg, sec 4, Blk. 32, H.&T.C. Sur. Prep. run tubing 2,096 ft.
M. J. Delaney No. 1 J. E. Cooper, H.&T.C. Sur. Tstg. 2,092 ft.
J. E. Fitzpatrick et al No. 1 H. B. Carr, sec. 125, Blk. 34, H.&T.C. Sur. S.D.R. 1,115 ft.
J. E. Fitzpatrick et al No. 1 F. K. Dyer sec. 135, Blk. 34, H.&T.C. Sur. S.D.R. 2,500 ft.
Hoss & Downey No. 1 Meyers, sec. 17, Blk. 32, H.&T.C. Sur. Spd. and S.D.
Hoss & Downey No. 1 Ross Avery, sec 36, Blk. 1, H.&T.C. Sur. S.D. 1,940 ft.
A. E. Lynch No. 1-A Johnson, sec. 8 Blk. 32, H.&T.C. Sur. Drlg. 827 ft.
Mahree No. 1 Wilson, sec. 133, Blk. 34, H.&T.C. Sur. Fsg. 5,084 ft.
Patillo & Webster No. 1 Johnson. Tstg. 1,990 ft.
Sayre Oil Co. No. 1 Bertner, sec. 34, Blk. 1, H.&T.C. Sur. Drlg. 240 ft.
O. E. Schkode No. 1 Boogher, sec. 1, Blk. 32, H.&T.C. Sur. Drlg. 160 ft.
L. F. White et al No. 1 Rector-Monroe, E cor. sec. 3, Blk. 1, W.&N.W. Sur. S.D. 4,710 ft.

Winkler County

Ed. L. Gelder No. 1 R. D. Kessler & F. Kessler, sec. 14, Blk. B-3, P.S.L. Sur. Loc.

Yoakum County

Bahago & Bond Oil Corp. No. 1 J. L. West, sec. 607, Blk. D, J. H. Gibson Sur. S.D.O. 5,393 ft.
Gulf No. 1 J. C. Futch, sec. 796, Blk. D. J. H. Gibson Sur. C.O. 5,170 ft.
Humble No. 1 Abilene State Bank, sec. 37, Blk. AX, P.S.L. Sur. Tstg. 5,005 ft.
Texas Co. No. 1 Walker, sec. 794, Blk. L. El. 3,656 ft.; T.D. 5,180 ft.; P.B. 5,162 ft.; S.D. 5,162 ft.

E. C. TEXAS WILDCATS

Anderson County

Tide Water-Seaboard No. 2 J. Reagan. J. Adams Sur. Drlg. 2,961 ft.

Angelina County

J. C. Bonham No. 1 Cameron Lbr. Co., E. Miller Sur., 3 mi. SE of Zavalla. S.D. 1,630 ft.
J. C. Bonham No. 3 Cameron Lbr. Co., E. Miller Sur., 3 mi. SE of Zavalla. Drlg. 621 ft.
B. L. Hoffman No. 1 Jones, W. W. Hales Sur., 8 mi. SW of Huntington. Drlg. 30 ft.
C. E. Parrott No. 1 J. C. Burres, W. Plucker Sur., 2½ mi. W of Huntington. Abd.

Cherokee County

Bunn Drlg. Co. No. 1 C. Bounds, W. H. Walters Sur., 2½ mi. SE of Lone Star. Drlg. 780 ft.
J. G. Mayo et al No. 1 J. H. Bowlery, W. H. Walters Sur. Drlg. 2,900 ft.
Merica Oil Co. No. 1 New Birmington Dev. Co., Levi Jordan Sur., ¾ mi. S of Rusk. Drlg. 4,707 ft.
Merica Oil Co. No. 1 Cherokee Dev. Co., A. J. Acker Sur., 2 mi. E of Maydelle. Abd. loc.

Dallas County

Plaza Oil Co. No. 1 Davidson, Marchants Sur., 1 mi. NW of Seagoville. S.D. 2,152 ft.

Falls County

McCleod et al No. 1 F. Bolton, J. P. Cockrill Sur., 4 mi. NW Rosebud. D.&A. at 1,813 ft.

Franklin County

White-McGee & Harper No. 1 Harper, W. N. Dawson Sur., on Franklin-Hopkins Co. line, 6 mi. SW of Hagansport. R.U.

Freestone County

C. E. Rossiter No. 1 J. P. Fulton in J. P. Fulton Sur., 2½ mi. E of Donie. D.&A. at 956 ft.

Gregg County

Humble O. & R. Co. & Gulf O. Corp. No. 1 E. Robertson, M. Mann Sur., 2½ mi SW of Longview Trinity test. El. 275 ft.; drlg. 9,409 ft.

Henderson County

Howard Pet. Co. No. 1 H. W. Barton, A. J. Allen Sur. Drlg. 3,820 ft.
Jones-Mallory No. 1 A. Mallory, T. S. Mitchell Sur., 6 mi. SW of Mabank. S.D. 107 ft.

Hill County

J. Willis No. 1 W. P. Ball, S. Marshall Sur., 3 mi. NW of Covington. Abd. loc.

Houston County

Peyton Bros. No. 1 J. N. Daniels, J. M. Procella Sur., ½ mi. N of Procella. Drlg. 5,026 ft.

Limestone County

C. L. Brown No. 27 N. B. Boyd, R. B Longbotham Sur., 3 mi. S of Wortham D.&A. at 1,558 ft.
J. S. Cosden, Jr. No. 1 J. J. Bower, J. Breeding Sur., near Prairie Hill. S.D. 602 ft.
Stanolind O. & G. Co. No. 1 T. Norris, in Thresher Sur., 5 mi. N of Kosse; 6,500 ft. test; elev. 528 ft. Pull csg. and P.B. to test.

McLennan County

Chapman & Kahn No. 1 Carl Hartsman, B. C. Walters Sur., 1½ mi. S of McGregor. S.D. 1,326 ft.
Kilgore No. 1 J. M. Marrs, J. S. Rutland Sur., 2 mi. S of Bosque. Drlg. 1,271 ft.

Navarro County

G. W. Gibson No. 1 J. H. Edgar, M. Meazel Sur., 2½ mi. S of Richland. Drlg. 530 ft.
G. W. Gibson No. 2 Dr. J. H. Edgar, M. Meazel Sur., 3½ mi. S of Richland. Drlg. 70 ft.
Natural Pet. Co. No. 1 Karen Brown, W. T. Turner Sur., 2 mi. E of Roane. S.D. 1,735 ft.
Mrs. Jane Robinson No. 1 Fortson Bros., Eli Smith Sur., 5 mi. NE Corsicana S.D. 2,570 ft.
T. Sharpe et al No. 1 E. B. McDowell, T. Jordan Sur., 1½ mi. S of Bassett. D.&A. 3,160 ft.

Smith County

H. L. Hunt et al No. 1 S. H. Bradly, T. P. Payne Sur., 10 mi. E of Tyler at Chappel Hill. Drlg. 5,088 ft.
Mayo-Housh & Thompson No. 1 J. B. Mayfield, Wm. Keys Sur., 4 mi. SE of Tyler. D.&A. 4,979 ft.

Titus County

Lee Umbernhour No. 1 J. M. Sykes, J. Mathews Sur., 1 mi. N of Winnsboro. S.D. 1,865 ft.

Trinity County

Billnoski et al No. 1 Trinity State Bnk., B. F. Wright Sur., 2 mi. S of Trinity. Drlg. 2,185 ft.

Upshur County

Tom Hunter and American Liberty No. 1 J. P. Carter, J. H. Fields Sur. S.D. Drlg. 8,075 ft.

NORTH TEXAS WILDCATS

Archer County

Kilgore-Luginbyhl & Johnson No. 1 Ford, T. M. Cecil Sur. A-982. 4,500-ft. test; drlg. 3,410 ft.
Wayne King et al No. 1 C. A. Arthur, sec. 3, G.H.&H. Sur. A-158. S.D. 210 ft.
Lewis Prod. Co. No. 1 W. C. Frey, sec. 17, P.P.S.L. Sur. 6⅝-in. 3,978 ft.; sdy. L. 3,973-82 ft.; test showed oil; testing 4,120 ft.
C. W. Snoddy No. 1 Jones, T. Freeman Sur. A-134. Drlg. 2,002 ft.

Baylor County

D. S. Kelly No. 1 W. T. Waggoner, sec. 54, T.&N.O. Sur. S.D.O. 1,200 ft.
Wilcox O. & G. Co. No. 1 W. H. Portwood, T.E.&L. Sur. Loc.; 6,000-ft. test.

Clay County

Barnett Pet. Co. No. 1 Ben Nutter, sec 30, Grayson Co. Sch. Lds. S.D. 4,087 ft.
Walter Gant No. 1 Bryant Edwards, S. C. Beldon Sur. A-12, 6,000-ft. test. Drlg. 4,100 ft.
Healdton O. & G. Co. No. 1 Wallace, Belcher Subd. Drlg. 5,225 ft.
W. P. Luse No. 1 Hapgood, sec. 68, Marion Co. Sch. Ld. 5,000-ft. test; drlg. 3,020 ft.
Wood Pet. & Roy. Corp. No. 1 I. H. Kempner, Blk. 44, Bosque Co. Sch. Ld. Sur. A-10. Drlg. 2,020 ft.

Cooke County

Keil & Randall No. 1 Rogers, E. Barnes Sur. A-43. Cmtd. 43 ft. 10 in.; drlg. 2,010 ft.
H. L. Nutting et al No. 1 H. P. Ware, A.C.C. Bailey Sur. A-44. T.D. 2,230 ft.; tstd. water and rainbow 2,216-19 ft.; S.D.O.
Sinclair Prairie Oil Co. No. 1 J. M. Best, T. Toby Sur. A-1054. Drlg. 1,001 ft.
Sunset Oil Co. No. 1 J. T. Donald, S.P. R.R. Sur. A-971. 3,500-ft. test; drlg. 1,670 ft.

Denton County

B. Lee No. 1-B Boyles, S. Ross Sur. A-112. Drlg. 1,800 ft.

Foard County

Texas Co. No. 16 Johnson, sec. 37, S.P. R.R. Sur. Drlg. 2,310 ft.

Jack County

Harper Pet. Co. 1 Mary E. Norman. A. Pearson Sur. A-1304. Loc.
Taubert & McKee No. 1 R. H. Eatherley, G. C. Stanley Sur. A-1653. Drlg. 1,390 ft.

Knox County

King & McCurday No. 1 Hoblitt, H.&T.C. Sur., Blk. 46. Spd.

Montague County

H. H. Powell No. 1 Arch Durham, W. J. Wagoner Sur. A-936. Drlg. 820 ft.
E. J. Ruwaldt No. 1 J. A. Hoffman, T. Puckett Sur. A-607. Drlg. 290 ft.
J. W. Sorrell et al No. 1 J. E. Waithall, Sam. H. Smith Sur. A-662. S.D.O. 2,720 ft.

Wichita County

Bolin & Whittington No. 1 Waggoner Bros., sec. 21, H.&T.C. Sur. Sdy. L. 3,840-62 ft.; 6⅝-in. 3,851 ft.; flowed & swabbed 40 bbls. per hr. and S.D. for R.R. com. test.
C. W. Boller No. 1 S. Y. Collins, Charles Roberts Sur. A-540. Drlg. 2,240 ft.
M. T. Flanagan No. 1 Texas L. & M. Co., J. McColl Sur. A-194. Cor. 4,070 ft.; sd. 4,050-61 ft.; trace oil; 6⅝-in. 3,920 ft.; to test S.S.O. 4,050-60 ft.
E. J. Stump No. 1 M. P. Bishop, L. Netherly Sur. A-240. S.D.O.: S.L. 3,885-3,997 ft.; shot 350 qts. 3,884-3,970 ft.; flowed 10 min. after shot and bridged; now C.O.

Wilbarger County

Loyd H. Brown No. 1 W. T. Waggoner sec. 33, Blk. 6, H.&T.C. Sur. Running 5⅛-in. csg. to test L.S.O. 4,237-38 ft.
N. Gilbert No. 1 McGill, sec. 3, Blk. 9, H.&T.C. Sur. Sand 3,762-3,791 ft.; trace oil; drlg. 3,785 ft.
Jack Kadane No. 1 W. T. Waggoner, sec. 20, H.&T.C. Sur., Blk. 5. Sd. 2,230-40 ft.; trace oil; drlg. 3,340 ft.
E. C. Lawson No. 1 Ruitsch, sec. 21, H. &T.C. Sur., Blk. 9. Drlg. 2,200 ft.
Phillips Pet. Co. No. 1 W. T. Waggoner "Barger," sec. 11, H.&T.C. Sur., Blk. 14. Drlg. 3,410 ft.

Young County

Cosden Oil Co. No. 1 Price, Y.C.S.L. Sur. No. A-1285. Drlg. 75 ft.
N. B. Crenshaw No. 1 J. C. Dwight, sec. 1,444, T.E.&L. Sur. S.D. 400 ft.
Howard Pet. Co. No. 1 G. R. Stewart, sec. 84, C.S.L. Sur. Drlg. 4,982 ft.
Kadane-Griffith No. 1 Sanders, sec. 1989, T.E.&L. Sur. Drlg. 4,210 ft.
A. N. Munhall No. 1 Ed Johnson, A. McLennan Sur. A-185. Drlg. 2,280 ft.

RANGER (CENTRAL TEXAS) DISTRICT

Callahan County

Joe Gallagher No. 1 W. T. Harris, 200 ft. from S line, 1,050 ft. from E line sec. 347, G. W. Denton Sur. 2,000-ft. test, 5 mi. N Oplin.
J. H. Howell No. 1 E. I. Vestal, 1,149 ft. E line, 1,000 ft. N line, Jesse Dyson Sur., 2 mi. NE Cross Plains, rotary to 4,000 ft. Surf. to 100 ft.; S.D. at 600 ft.
J. C. Jackson et al No. 1 Thompson, 2 m. S. Eula, sec. 30, B.B.B.&C. Sur. S.D 1,955 ft.
Wittmer Oil & Gas Properties, Inc., No. 1 R. D. Williams et al, 300 ft. from N line, 467 ft. from W line sec. 2,269, T.E.&L. Sur., 2 mi. NE Putnam, 4,500-ft. test. Set 12½-in. at 1,048 ft.; drlg. 1,558 ft.

Coleman County

J. F. Brock No. 1 J. H. Livingston, SE cor. SW¼ county, J. D. Waters Sur. No 208. S.D. 1,070 ft.
S. M. Devine et al No. 1 Masterson, 2 mi. W of Burkett, Asa Wickson Sur. Drlg. 1,680 ft.
Garrett Oil Co. No. 1 W. S. Smith et al., 4 mi. SE Coleman, J. Thiele Sur. 2,300-ft. test.

Comanche County

N. D. Gallagher et al No. 1 Mrs. B. Terry, Desdemona pool, N. H. Kuykendall Sur., S.O. in Ellenburger; drlg. wtr. 4,917 ft.
Dobbs Oil Co. No. 1 Hodges, sec. 11, Blk. 2, H.&T.C. Sur., T.D. 2,710 ft.; acid. 4,000 gal. 2,630-62 ft.; bldg. tanks.

Eastland County

G. D. Chastain et al No. 1 Weddington, 4 mi N. Cisco, sec. 496, S.P.R.R. Sur. T.D. 4,079 ft.; plugging back.
Hayner, Reaves & Hose No. 1 P. L. Larkin, 3 mi. NW Rising Star, 912 ft. from W line, 546 ft. from S line, NW¼, sec. 40-2, E.T.R.R. Sur. Drlg. 620 ft.
Neil A. Moore No. 7 Holcomb Heirs, 970 ft. from W line and 600 ft. from N line, SW¼ 1-4, H.&T.C. Sur. Loc.

Fisher County

Forest Dev. Corp. & Daube No. 1 L. G. Bennett, 660 ft. from N & E lines, sec. 51-3, H.&T.C. Sur. Rotary to 4,500 ft.; 3 mi. SW of Rotan.
Owens-Snebold & A. C. Varner No. 1 J. H. Milsap, 3,500-ft. wildcat, 2 mi. NW McCaulley, 330 SL 330 WL. sec. 61-2, H.&T.C. Sur. Drlg. 1,110 ft.
Tom C. Patton, Inc. No. 1 John B. Stribling, 660 ft. from S and E lines, sec. 110-3, H.&T.C. Sur. Pits; 4,500-ft. test.

Haskell County

Fain-McGaha Oil Corp. No. 1 T. G. Hendrick, C W½ sec. 104, Indianola Ry. Sur. Set 150 ft. of 12½-in.; drlg. 1,600 ft.
J. W. and A. E. McMillan No. 1 A. E. Pardue, 440 ft. from N and W lines, S½ M. Collum Sur. No. 4 A-685. Rotary to 3,500 ft.

Jones County

H. G. Daniels & Dale H. Dorn No. 1 F. T. Moore, 220 ft. from W line, 330 ft. from S line, Moore 115 ac. in John Winter Sur. 138. Drlg. 1,780 ft.
W. W. Fondren No. 1 Cox-Manley, 330 ft. from S line and 330 ft. W of C of S line of C. B. Sheppard Sur. 70. Drlg. 1,805 ft.
F. A. Gillespie & Sons No. 1 J. N. Hatfield, 3 mi. N Noodle Creek field, 330 from N and E lines, 80-ac. tr. in M. Northington Sur. No. 270. U.R. 6-in. to 2,770 ft., T.D.
Mack Hayes and Montour Oil Co. No. 1 Chittenden, 7 mi. SE Hamlin, Subd. 18, McMullen & McGloin Sur. 337. Drlg. 3,000 ft.
Humble No. 1 I. N. Irwin, 330 ft. from S and W lines sec. 48-18, T.&P. Sur., 1½ mi. E Noodle Creek pool. Rotary to 3,200 ft.
Thos. D. Humphrey No. 2 N. D. Newton, 330 ft. from W line, 990 ft. from S line, Jas. Halfpenny Sur. 139. Drlg. 1,500 ft.
Iron Mountain No. 1 D. J. Herbst, 5 mi. E Hamlin, 330 ft. from N and E Sub. 18, Austin Williams Sur. 339. Set 10-in 2,245 ft.; H.F.W. 2,770-80 ft.; U.R. 8-in.
F. M. Loop No. 1 W. T. Young, 330 ft. from N line, 253 ft. from E. L. Young 276-ac., D. Bustillos Sur. 189. Loc.
F. W. Martin No. 1 B. N. Herndon, 330 ft. from S and W of NW sec. 1, M.E.&P. Sur. Collapsed 8-in. at 2,567 ft., T.D.
F. W. Merrick et al No. 1 C. A. Cox, cent. Cox 119-ac. tr., J. H. Hughes Sur. No. 201. Collapsed 8-in. at 1,700 ft., T.D.
B. H. Roth No. 1 D. A. Kinney, 4,000-ft. test, 330 ft. from S and E of NW sec. 7-4, H.&T.C. Sur. Drlg. 2,800 ft.
Stanton & Miller No. 1 Gaither, 4½ mi. N of Anson, sec. 38, B.B.B.&C. Sur. S.D. 2,180 ft.
Joe A. Worsham et al No. 1 J. H. Commons, 330 ft. from E line, S½ E 80-ac., Subdiv. 8, A. W. Hill Sur. No. 4. Drlg. 1,868 ft.

Nolan County

Hantho-Nelson, Inc., No. 1 J. H. Withers, C SW¼ sec. 65-21, T.&P. Sur. Wildcat to drill 4,000 ft. Spd. to 200 ft. W.O. rotary.

Palo Pinto County

W. H. Clement No. 1 Federal Life Ins. Co., 2 mi. W Mineral Wells, sec. 51, T.&P. Sur., Blk. A (E of B). Drlg. 1,710 ft.
Bill Cole et al No. 1 J. W. Harris Est., NW cor. county, De La Garza Sur. S.D. 950 ft.

Shackelford County

Danciger No. 2 J. E. McCown, 330 ft. from S and E sec. 158, B.B.B.&C. Sur., N offset to Haterius. Top Palo Pinto 3,187 ft.; cored 3,189 to 3,212 ft.; filled 1,500 ft. in oil; acidized 1,000 gals.; testing.
Joe DeGrazier No. 1 Harbough, E cen. part of county, sec. 1,563. T.E.&L. Sur 4,500-ft. test; H.F.W. 2,185-95; U.R. 8-in.
Forest Dev. Corp. No. 1 T. G. Hendrick, NW cor. of county, 2,600 ft. from N line and 4,300 ft. from W line of sec. 1, A.B.&M. Sur. Est. 15,000,000 ft. gas per day 1,603-17 ft.; gas 1,662-65 ft., incr. est. 4,000,000 ft., 1,680-85 ft.; est. 1,000,000 ft. 1,804-06 ft. and 1,810-15 ft.; S.S. oil and wtr. 1,864 ft.; inc. wtr. 1,880-82 ft.; set 6-in. to 2,620 ft.; wtr. 2,755 ft.; drlg. 2,792 ft.
Ungren & Frazier No. 1 J. S. McKeever, 306 ft. from W line, 354 ft. from N line, NW¼ SW ¼ sec. 14-3, H.&T.C. Sur. 3,500-ft. test; fsg. blr. 1,390 ft.

Stephens County

Danciger Oil Ref. Co. No. 1 Mrs. Aileen Copeland, 8 mi. SE Ivan, 1,196 ft. from E line and 350 ft. from S line of sec. 1, M.E.P.&P. Sur. Drlg. 4,204 ft.
Graham, Hafner, Lane & Inman No. 1 J. N. Yocum, 5 mi. SE of Frankell, 250 ft. from N and E lines of farm or approx. 2,525 ft. from E line and 1,400 ft. from S line of John R. Carter Sur. Trt. 1,000 gal acid 3,575-90 ft.; est. 25-50 bbls. per day; drlg. 3,434 ft.
I. C. Little No. 1 R. M. Rogers, NE¼ of county, 150 ft. from E line and 1,980 ft. from S line of sec. 28, T.&P. Sur. Blk. 5. Tstg. after 10,000-gal. acid 3,960-4,055 ft., 3,000,000 ft. gas; sulfur wtr. 4,490 ft., T.D.; plugging back.
Lone Star Gas Co. No. 5 R. W. Brooks, 400 ft. E and S of C of sec. 54-7, T.&P. Sur. Ellenburger test 2½ mi. N of Van Parmer pool.
G. Willard Rich No. 1 J. W. Andrews, 330 ft. W line, 450 ft. S line, NW¼ sec. 39-7, T.&P. Sur. Drlg. 1,500 ft.

Stonewall County

Bert Fields No. 1 R. P. Pierson, C of E 80-ac., E. A. & S. M. Lee Sur. Abst. 817. Loc.
General Crude Oil Co. No. 1 J. D. Smith, SW cor. county, 330 ft. from S and E lines of sec. 371. H.&T.C. Sur., Blk. 2. Set 13⅜-in. 2,119 ft.; set 10-in. at 3,508 ft.; cmt. 150 sacks.
F. B. Parriott No. 1 H. T. Carlile, 330 ft. from S line, 990 ft. from E line, SW¼ NE¼ sec. 293, Blk. D, H.&T.C. Sur., rotary to 5,500 ft., 6 mi. NW of Swenson. Set 8¼-in. at 3,345 ft.; cable drlg. 3,475 ft.

Oil Man's Calendar

April

11-12—Chicago, Ill. Oil Burner Institute, annual meeting, Palmer House.

12—Kilgore, Tex., East Texas Chapter, A.P.I. Division of Production, High School Auditorium.

13-15—Cleveland, Ohio, National Petroleum Association.

13-15—Houston, Tex., Petroleum Industry Electrical Association.

14-15—Milwaukee, Wis. Society of Automotive Engineers, National Tractor meeting, Schroeder Hotel.

14-15—Pittsburgh, Pa., Eastern District A.P.I. Division of Production, William Penn Hotel.

15—Charleston, W. Va., annual convention, West Virginia Petroleum Association, Daniel Boone Hotel.

17-21—Dallas, Tex., American Chemical Society.

19—Los Angeles, Spring meeting, Pacific Coast district, A.P.I. Division of Production, Biltmore Hotel.

19-21—Norman, Okla., Gas Measurement Short Course.

20-22—Buffalo, N. Y., American Institute Mining and Metallurgical Engineers, Open Hearth Conference.

25-27—Hot Springs, Ark., Western Petroleum Refiners Association, annual meeting.

29-30—Wichita, Kans., Interstate Oil Compact Commission.

29-30—Independent Petroleum Association of America—Executive Committee meeting.

May

5-6—Asbury Park, N. J. Fuel Oil Distributors Association of New Jersey, third annual convention, Hotel Berkeley Carteret.

9-12—New Orleans, La., Natural Gas Department, A.G.A.

11-13—Tulsa, Natural Gasoline Association, Hotel Tulsa.

12-14—Tulsa, National Oil Scouts Association of America.

14-21—Tulsa, International Petroleum Exposition.

23-25—Wichita, Kans., American Petroleum Institute, eighth midyear meeting.

27-28—State College, Pa., seventh annual conference, School of Mineral Industries, Pennsylvania Grade Crude Oil Association and Pennsylvania Natural Gas Men's Association.

June

4—Robinson, Ill., sixth annual Petroleum Conference of Illinois-Indiana.

6—Houston, Tex., Oil Workers International Union.

16-18—Pittsburgh, Pa., Pennsylvania Grade Crude Oil Association.

20-24—St. Louis, Mo., American Society of Mechanical Engineers.

12-17—White Sulphur Springs, W. Va. Society of Automotive Engineers, summer meeting, The Greenbrier.

15-18—Dallas, Tex. American Society of Mechanical Engineers, National Oil and Gas Power Meeting.

June-July

27-1—Atlantic City, N. J., annual meeting of American Society for Testing Materials.

August-September

31-3—Spokane, Wash., Pacific Coast meeting of American Institute of Electrical Engineers.

September

14-16—Santa Barbara, Calif., annual meeting Pacific Coast Gas Association, Biltmore Hotel.

October

——Tulsa, I.P.A.A., annual convention.

6-8—Knoxville, Tenn., fall meeting of industrial minerals division of American Institute of Mining and Metallurgical Engineers.

10-14—Chicago, National Safety Congress, Stevens Hotel.

Taylor County

E. P. Campbell et al No. 1 McGee & Manley, 330 ft. from N, 750 ft. from E lines. SW¼ sec. 22-16, T.&P. Sur. S.D.O. 2,460 ft.

Bert Fields et al No. 1 Sears, sec. 223, Blk. 64, H.&T.C. Sur. Drlg. 3,223 ft.

Wichita Prod. Co. No. 1 J. H. Parramore, 592 ft. from E line, 400 ft. from S line, SW¼ sec. 81-14, T.&P. Sur. Spd.

Throckmorton County

Humble O. & R. Co. No. 1-A Reynolds Cattle Co., 330 ft. from S and E lines. sec. 7-2, A.B.&M. Sur. H.F.W. 2,525-30 ft.; abd. 3,895 ft., T.D.

Jones & Stasney No. 1 C. T. Brockman, 330 ft. S line, 330 E line sec. 95, Comanche Indian Sur. Drlg. 300 ft.

Morris & Spoonts No. 1 Alden Bros., NW cor. county, 1,350 ft. from E line and 5,210 ft. from S line of Raymond Sanches Sur. A-248. Drlg. 810 ft.

White & Duncan No. 1 Reynolds Cattle Co., 330 ft. from S and W lines, NE¼ sec. 83, Comanche Indian Reservation. Spd.

Henry Zweifel No. 1 J. H. Lee, 4 mi. NE of Woodson, 930 ft. from E line and 2,011 ft. from S line of J. A. George Sur. T.D. 865 ft.; S.D.

Wise County

Latex Oil Co. No. 1 Smith, 3 mi. E of Bridgeport, Jas. Couch Sur. T.D. 4,075 ft.; P.B. to 3,910 ft.; S.D.; W.O.

Canadian Fields

(Continued from Page 90)

Nordon Corp. of Alberta, Ltd., and Nordon Consolidated, Ltd., subsidiaries of Nordon Corp. The holdings include acreage on the Del Bonita, Ross Lake, North and South Twin River and Pekisko Hills structures, as well as a joint interest with Imperial Oil, Ltd., in 147,000 acres south of Lethbridge. Terminal Oil, Ltd., a private company which some years ago tested the Del Bonita field, has been reorganized as Terminal Oil Co. with head office at Seattle, Wash., to develop Nordon-Alberta acreage. Operations will probably commence in the vicinity of the old Terminal No. 1, NE section 18-1-21w4, which finished in the Madison limestone at 5,112 feet with fair shows of gas and high-grade crude. Efforts will be made to put Terminal No. 1 on production, after which new drilling will be undertaken.

Moose Dome Shipments

On the Moose dome structure northwest of Calgary, Moose Oils No. 2, LSD 8, section 29-22-6w5, has delivered around 600 bbls. of 48-gravity crude by truck to Calgary. Moose No. 2 has been put on the pump, but the freezing of valves at No. 1 well, which supplies gas for pumping, has interferred with production.

To Resume Steveville Test

In the Steveville district, southern Alberta, Anaconda Oil Co. No. 1, LSD 15, section 9-22-12w4, will resume drilling this month from 1,207 feet.

East Central Alberta

On the Ribstone structure, east central Alberta, Blackfoot-Ribstone Oils No. 1, LSD 7, section 28-43-2w4, is rigged ready to spud. Gillies-Credille Drilling Co. of Edmonton has the contract.

In the Wainwright field, Montreal-Alberta Oil Co. No. 1, LSD 2, section 15-45-7w4, is in the lime below 3,500 feet. This is the greatest depth yet reached in the Wainwright field, corresponding to aproximately 5,500 feet in Turner Valley. Shows of gas and oil have recurred persistently through 1,200 feet of lime and recent samples indicate alternations of soft brown lime, soapstone and shale, indicating that the drill is nearing the break between the Upper and Lower Devonian where production is anticipated. Seismograph records indicated this break between 3,600 and 3,800 feet.

British Columbia Test

In the Sage Creek-Flathead area, southeastern British Columbia, a production test of Columbia Oils No. 1, bottoming at 8,028 feet, showed sulfur water and a noninflammable gas. Tests will probably be made of upper horizons where oil and gas shows were indicated.

Saskatchewan Drilling

It is expected that at least 10 wells will be active early this season in the province of Saskatchewan, with some additional tests likely to start later in the year.

In the Piwei Hills some 35 miles south of Hudson Bay Junction, Coal Gate Oils No. 1, section 34-39-5w2, is standing at 1,253 feet after getting a good show of crude at 1,128 feet. Work will resume as soon as the roads are clear, when 6⅝-inch casing will be run. It is planned to continue to 100 feet in the lime unless commercial production is found sooner. If no production is secured in the lime, the hole will be plugged back to test the showing in the lower Dakota formation at 1,128 feet.

In the Kamsack district, eastern Saskatchewan, some shallow gas production has been developed. The first show was struck last October at 233 feet in a deep test started by Coal Gate Oils, Ltd. Deep drilling was abandoned temporarily and four additional shallow wells have since been drilled to the same horizon, three securing gas and No. 4 encountering a good show of crude at 201 feet. In deepening water was struck; this was plugged off, saving the gas flow, but the oil was lost. In the same field, Canadian National Railways No. 1 is drilling in LSD 9, section 34-29-32w1, below 400 feet and will continue to about 700 feet, with a second gas horizon anticipated around 600 feet. Some 3 miles due west of Kamsack, Triangle Gas & Oil, headed by Charles H. Withers, has spotted a location in NE section 36-29-1w2, and will start drilling early this spring.

In the Simpson area, Simpson Oil Co. No. 2, LSD 2, section 11-29-25w2, will resume from 2,512 feet.

In eastern Saskatchewan, Canadian Industries No. 1, LSD 1, section 25-35-30w1, is standing at 892 feet. Northern Royalties No. 2, LSD 6, section 35-29-32w1, is around 190 feet. Northern Royalties No. 1, section 27-40-5w2, is down 1,160 feet.

In the western portion of the province a number of wells are expected to resume this spring. In the Unity district, Vera Oilfields No. 2, LSD 5, section 23-41-24w3, is resuming from 1,720 feet. Oil & Gas Association No. 3, LSD 6, section 33-22-7w3, is down 1,000 feet. Twin Provinces No. 1, section 21-11-29w3, will deepen from 2,100 feet. On the Gem dome structure, Gem Dome Oils No. 1, LSD 6, section 4-10-29w3, has been standing at 300 feet.

Operations in Manitoba

In the province of Manitoba, Gates Petroleum, Ltd., of Winnipeg is arranging for completion of a well started at Pilot Mound, 85 miles from Winnipeg. Contract to complete the well to 2,000 feet or production has been let to Perry L. Withers. It is at 604 feet, after encountering only a small show of gas, but an important gas sand is looked for around 725 feet. Drilling will resume early this month. Officers of the company are: President, W. A. Johnson; secretary-treasurer, A. S. McDonald; directors, O. B. Knight, Frederick Heap, E. P. Burns.

Portage Oil & Gas, Ltd., of Winnipeg is planning to drill a test near Treherne; and several other Winnipeg groups are arranging for tests in the southwestern portion of the province.

Prince Edward Island Prospects

It is reported that oil seepages have been discovered in the western part of Prince County, in the province of Prince Edward Island, and that engineers representing the Shell interests are investigating a potential field in direct line with the oil and gas fields in Albert and Westmoreland counties, New Brunswick, across Northumberland Strait.

A government lease of oil and gas rights in Prince Edward Island is held by Hugh MacKay of Sapulpa, Okla. Mr. MacKay, an oil geologist and a native of Nova Scotia, in 1918 made a survey of the Gaspe, Nova Scotia and Prince Edward Island coasts, and in 1920 obtained a lease of the oil rights on Prince Edward Island from the provincial government subject to expenditure of $350,000 over a term of years. Mr. MacKay interested Henry L. Doherty & Co. who secured a geological investigation, on the strength of which a test was started on Governor's Island in Charlottetown Harbor. Doherty No. 1 ran into a fishing job at 3,000 feet and was abandoned but No. 2 was drilled to 6,000 feet without obtaining commercial production. The outlay on investigation and development exceeded $400,000. Mr. MacKay's lease expired in 1930, but was then renewed for a further 10 years.

Ontario Drilling

In the Dover field, Kent County, Ontario, Prairie Oil & Gas Co. No. 6, Orville Crow farm, Lot 6, Front Concession, Raleigh is drilling more than 90 feet in the Trenton limestone.

In the Brownsville field, Oldreeve and associates No. 2, Lot 2, Concession 10, Bayham Township, has been delayed by casing trouble. Kidd No. 2, Lot 25, Concession 12, Dereham Township, is drilling.

Gas Field Operations in N. Y.-Penn.

COUDERSPORT, Pa., Apr. 4.—New York State Natural Gas Co.'s wildcat test on the S. H. English farm in Van Etten Township, Chemung County, New York, found the Oriskany sand dry but will be drilled deeper with a test of the Medinas as a final objective.

This test topped the Onondaga lime at 3,178 feet and found the top of the Oriskany at 3,222 feet. This formation was 70 feet in thickness but unproductive. The hole is now drilling at 3,307 feet.

There were no completions nor reports of any new operations in this area during the past week.

Pennsylvania Operations

New York State Natural Gas Co. deepened its test on the W. A. Simmons farm in Brookfield Township, Tioga County, to 2,930 feet during the past week as a number of other operations were getting underway in this general area.

New York State is moving in on the J. D. Morley farm, Bingham Township; Hanley & Bird are building the rig on the Flora Rooks farm, Harrison Township, and New Penn Development Co. is building the rig on the James Hill farm, West Branch Township, new Potter County operations. There were no new developments in the remaining six tests, most of which are shut down, in Pennsylvania during the week.

New York Operations

New York State Natural Gas Co.'s test on the Lyle Wheatcraft farm in Woodhull Township, Steuben County, found salt water in the Onondaga and is bailing at 3,865 feet. Top of this formation was at 3,840 feet.

The status of other Woodhull operations follows: G. L. Cabot, Inc., drilling at 1,205 feet on the C. Groves No. 2 farm after running 773 feet of 8-inch casing; G. L. Cabot, Inc., shut down at 1,204 feet on the Neva Husted farm; Sylvania Corp., running pipe after reaming to 614 feet on the H. Hand No. 2 farm; New York State Natural Gas Co., drilling at 1,635 feet on the Park Estate farm; New Penn Development Corp., drilling at 1,310 feet on the M. K. Husted farm; Clancy and others, shut down on the R. Towsley farm.

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1938 High	1938 Low	Week ending Apr. 2 Sales	High	Low	Close	Stocks—	Total shares outsanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
72½	57	2,700	60½	58	60½	Amerada Corp.	788,675	N.P.	50cQ	4-30-38	$2.00	114⅞	51½	125½	75
24	17¾	14,400	19½	17¾	18⅞	Atlantic Refining	2,663,999	$25	25cQ	3-15-38	1.00	37	18	35⅛	26⅝
19	12⅛	8,800	14	12⅛	13⅞	Barber Co.	387,149	$10	75c	12-16-37	1.00	43⅜	10⅛	38½	21
16⅜	10⅛	19,700	12½	10⅛	12¼	Barnsdall Oil Co.	2,250,344	$5	25cQ	5-2-38	1.00	35¼	10	28¼	14⅛
10½	7	56,800	7¾	7	7¾	Consolidated Oil Corp.	13,919,417	N.P.	20cQ	5-14-38	.90	17⅞	7	17¼	11½
34⅜	21¼	16,300	24⅝	21¼	24½	Continental Oil of Delaware	4,682,583	$5	25cQ	3-31-38	1.50	49	24	44⅞	28⅛
8⅞	5	26,300	6	5	6	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	17⅝	4¾	13⅞	6⅜
22⅝	12¼	9,900	14¼	12¼	14¼	Mid-Continent Petroleum	1,855,912	$10	$1	11-1-37	1.50	35⅜	14	30⅞	17¼
17¾	11	2,800	12	11	11½	Mission Corporation	1,399,345	N.P.	25c	12-24-37	1.25	34	15	29⅞	16¾
23	14⅛	18,400	16½	14⅛	16⅜	National Supply	382,591	$25	$2 pf.‡	12-22-37	(‡)	41⅜	17⅝	75½	19⅞
14⅞	10	22,000	11¼	10	11¼	Ohio Oil Co.	6.563,377	N.P.	50cSA	12-15-37	1.00	22⅞	9	18	12⅛
15⅞	10¼	4,400	10⅜	10¼	10⅜	Pacific Western Oil	1,000,000	N.P.	75c	12-15-37	.75	29¾	11¾	23½	11¾
9	7	100	7	7	7	Pan American Pet. & Trans.	4,702,945	$5	$1 *	12-21-37	1.00	17⅛	7	20⅝	12¼
42½	27¼	24,000	30⅞	27¼	30¾	Phillips Petroleum	4,449,052	N.P.	50cQ	3-1-38	2.75	64	30⅛	52⅜	38⅛
20	15	10,700	16½	15	16½	Plymouth Oil Co.	1,029,800	$5	35cQ	9-30-37	1.65	29⅞	13	27¾	11⅞
13½	8½	35,300	9⅝	8½	9½	Pure Oil Co.	3,281,120	N.P.	25c	12-1-37	.25	24⅜	8¾	27⅞	16
7⅞	5	13,600	5⅝	5	5⅝	Richfield Oil Corp.	3,285,120	N.P.	25c	12-24-37	.25	6½	4⅛	..	..
27½	15½	4,900	17¾	15½	17¾	Seaboard Oil of Delaware	1,224,283	N.P.	25cQ	3-15-38	1.00	54⅛	16	44	30½
18¼	10	10,500	12⅞	10	12⅞	Shell Union Oil	13.070,625	N.P.	50c	12-20-37	1.00	34¾	14⅞	28¼	14¾
34¾	18½	7,400	22	18½	20¾	Skelly Oil	1,003,949	$15	50c	12-15-37	1.50	60⅝	26½	47⅜	19½
16⅜	10¾	61,700	12½	10¾	12¼	Socony-Vacuum	31,151,071	$15	25c	3-15-38	.80	23¼	13	17½	12½
33⅞	25⅛	34,000	27¾	25⅛	27¾	Standard Oil of California	13,014,754	N.P.	35cQ†	3-15-38	2.00	50	27⅛	47⅝	35
35½	24¾	20,600	27	24¾	26¾	Standard Oil (Indiana)	15,267,030	$25	25cQ	3-15-38	2.30	50	26½	48½	32¾
35½	34	No sales	..	..	..	Standard Oil of Kansas	112,837	$10	$5	12-20-37	5.00	43	30⅝	31	25
54⅛	39¾	35,700	44	39¾	43½	Standard Oil of New Jersey	25,856,081	$25	$1.25SA†	12-15-37	2.50	76	42	70⅜	51⅛
57⅞	45	33,900	47	45	45½	Sun Oil	2,316,484	N.P.	25cQ	3-15-38	$1 & 8% Stk.	77½	44½	91	70
3⅜	1⅜	32,000	2⅛	1⅜	2⅛	Superior Oil Corp.	1.388,079	$1	....	....	....	7⅜	1½	6⅜	3
44⅞	32⅝	43,700	36	32⅝	35⅞	Texas Corp.	10,875,006	$25	50cQ	4-1-38	2.25	65⅛	34¾	55¼	28⅞
4⅞	2⅝	10,200	3⅛	2⅝	3⅛	Texas Gulf Producing Co.	888,135	N.P.	10c	12-23-37	.10	9⅝	2	8⅞	4⅜
10⅛	7	7,300	7¾	7	7½	Texas Pacific Coal & Oil	888.237	$10	10c	3-1-38	.40	16⅝	5⅜	15¼	7½
15½	10⅛	23,600	12¼	10⅛	12¼	Tide Water Associated	6,369,175	N.P.	25cQ	3-1-38	1.20	21⅝	13⅛	21⅜	14¾
21⅝	17⅛	9,500	18¼	17⅛	18	Union Oil of California	4,666,270	$25	30cQ	2-10-38	1.40	28¼	17½	28½	20¾
23½	20	2,600	20⅞	20	20	Union Tank Car Co.	1,200,000	N.P.	40cQ	3-1-38	1.60	31½	22	31⅝	22⅝
2¾	1⅝	2,900	2	1⅝	2	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	6¼	1¾	5¼	2¾

*Payable in 3½% notes. †Includes extras. ‡One-tenth share $2 preferred stock.

New York Curb Exchange

1938 High	1938 Low	Week ending Apr. 2 Sales	High	Low	Close	Stocks—	Total shares outsanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
9⅜	5	5,700	5⅝	5	5½	American Republics Corp.	1,308,049	$10	30c	12-27-37	$0.40	10	6⅝	..	..
10¼	5¼	3,300	6⅛	5¼	6	Bridgeport Machine Co.	260,000	N.P.	1.25	12-30-37	$2.00	21⅜	7	21	13¼
39	34¼	400	36½	34¼	34¼	Buckeye Pipe Line Co.	200,000	$50	75cQ	3-15-38	3.75	51½	36	50	39¾
110	97	350	103	97	99½	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	3-21-38	7.00	123	95½	124¾	105
2	1	72,300	1⅛	1	1	Cities Service	37,804,394	N.P.	....	6-1-32	....	5⅜	1½	7⅜	3
2⅜	1	8,600	1⅜	1	1⅜	Cosden Petroleum	399,687	$1	....	..	....	5½	1½	4½	1½
27½	17½	10,800	20¼	17½	19½	Creole Petroleum	6,974,356	$5	50cSA†	12-15-37	1.00	38¾	20¼	39	19⅞
8¾	5½	1,800	7⅛	5½	7⅛	Darby Petroleum	351,390	$5	25cSA	1-15-38	.50	18⅝	6½	18⅛	9
3½	2	1,100	2¼	2	2	Derby Oil & Refining	263,162	N.P.	....	.....	....	8⅜	2¼	6¾	1⅞
31	22⅝	100	22⅝	22⅝	22⅝	Eureka Pipe Line	50,000	$50	$1Q	2-1-38	4.00	47½	24½	47½	38½
42⅞	33	9,200	36½	33	35¾	Gulf Oil Corp.	9,076,202	$25	25cQ	4-1-38	1.00	63½	33	59	36
70	56	4,400	59	56	56¾	Humble Oil & Refining	8,923,935	N.P.	37½c	4-1-38	2.00	87	54⅞	80	57
19½	15	11,200	17	15	15¾	Imperial Oil of Canada	26,919,871	N.P.	62½cSA†‡	12-1-37	1.25	24¼	14½	24½	19¾
8¼	6⅝	400	6¾	6¾	6¾	Indiana Pipe Line	300,000	$10	30c	5-14-38	.80	15	5⅞	9¾	5½
31¼	23	7,700	25¾	23	25¾	International Petroleum	14,247,088	N.P.	$1.25†‡	12-1-37	2.50	39½	23½	39⅝	32⅝
5	3¼	800	3½	3¼	3½	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	....	8¾	2⅜	5¾	2⅝
25⅛	15⅝	5,200	18¾	15⅝	18¾	Lion Oil Refining	434,820	N.P.	50cQ†	12-24-37	1.50	34	12½	17¾	7⅜
9¼	6⅝	2,300	6⅞	6⅝	6¾	Lone Star Gas	5,382,723	N.P.	20c	4-20-38	.60	14¼	5¼	14¼	9⅞
9⅜	6½	7,700	7⅜	6½	7⅜	Louisiana Land & Exp.	3,000,000	N.P.	20cQ†	12-15-37	.50	15¼	6¾	15⅜	9⅞
8⅜	6⅜	2,900	7⅛	6⅜	7	Midwest Oil Co.	998,444	$10	50c	12-15-37	1.00	14⅝	6¼	..	..
5¼	4½	3,900	5	4½	5	Mountain Producers	1,682,182	$10	30cSA	12-15-37	.60	7⅞	4½	8⅜	5
14⅝	12⅛	1,800	12¾	12⅛	12¾	National Fuel Gas	3,810,183	N.P.	25cQ	1-15-38	1.00	19½	12	23	17⅜
9¼	7⅝	1,000	8	7⅝	7¾	National Transit	509,000	$12.50	55cSA	12-15-37	1.00	12½	7¼	15¾	9¼
2⅝	1½	3,800	1½	1½	1½	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	....	5	1⅛	6⅝	1⅝
4½	4	No sales	..	..	..	New York Transit	100,000	$5	15c	4-15-38	1.00	5⅜	3⅞	6¼	4¼
6	4	1,900	5⅛	4	4	Northern Pipe Line	120,000	$10	25cSA	12-1-37	1.00	12¾	5¾	9¾	4⅞
7⅜	4⅛	37,100	5⅛	4⅛	5⅛	Pantepec Oil	1,608,700	N.P.	....	.....	....	9⅝	2¾	10⅛	3¼
3½	1⅝	2,500	2⅛	1⅝	1⅞	Root Petroleum Co.	336,045	$1	25c	2-1-37	.25	13¾	2	19¼	4½
4	2⅛	400	2½	2⅛	2½	Ryan Consolidated	296,931	N.P.	....	.....	....	6½	2¼	4¾	1⅞
5⅜	3⅜	No sales	..	..	..	Southern Pipe Line	100,000	$10	15cSA	3-1-38	.45	7¼	3⅞	7⅞	3¼
39	28¾	1,300	32½	28¾	31	South Penn Oil	1,000,000	$25	50cQ†	3-31-38	3.65	56	35	44	32½
22¼	19½	No sales	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	50cQ	4-1-38	2.00	42	20	60	44
18	15	3,400	15⅝	15	15½	Standard Oil of Kentucky	2,604,790	$10	25c	3-15-38	1.50	21⅛	14¾	23⅜	17⅛
7½	6⅛	300	6⅜	6⅛	6⅛	Standard Oil of Nebraska	166,403	$25	25c	3-29-37	.25	13¾	8	14⅝	11
22	16¼	1,600	18	16¼	16½	Standard Oil of Ohio	753,740	$25	25c	3-15-38	1.50	45	16	40	21¾
3¼	2⅛	13,300	2⅝	2⅛	2¼	Sunray Oil	1,910,119	$1	10c	12-24-37	.25	4⅞	2	5	2⅝
4⅜	3½	1,500	4	3½	4	Texon Oil & Land	336,028	$2	15cQ	3-31-38	.45	7⅝	2	9¾	5⅜
7⅝	4⅝	3,700	5⅛	4⅝	5	Transwestern Oil Co.	750,000	$10	....	.....	....	13⅞	4⅝	..	..
5¼	2¾	48,000	3¼	2¾	3¼	United Gas Corp.	7,818,959	$1	10c	9-15-37	....	13⅝	3	10¾	4

†Includes extras. ‡Payable in Canadian funds. §Of which $1 was in preferred stock.

PERSONAL

WILLIAM H. McINTYRE, president of the Wasatch Oil Refining Company, Salt Lake City, Utah; HENRY D. MOYLE, vice president, and K. W. YEATES, sales manager; and JOSEPH DRUMHELLER, of Spokane, Wash., have organized the Inland Empire Refineries, Inc., which is to build a cracking-type refinery in Spokane. The plant will run on crude from the Cut Bank field.

BRUCE BARKIS, chairman; J. P. ROCKFELLOW, secretary, and H. S. STARK, W. L. BAGBY, J. E. HOLLINGSWORTH, and A. D. JACKSON have been appointed members of a new Pacific Coast topical committee on vocation of the Pacific Coast District, Division of Production of the American Petroleum Institute. Announcement of the appointments was made by L. L. AUBERT, of the Bankline Oil Company, chairman of the Pacific Coast section.

JAMES W. GRAY, formerly chief engineer with the de Florez Engineering Company, has opened an office as consulting engineer at Grayport West Oak, Basking Ridge, N. J.

WILLIAM STAMPS FARISH, JR., whose father is president of the Standard Oil Company (New Jersey), and MISS MARY STOVALL WOOD, whose father is president of Sears, Roebuck & Company, are to be married in June, it is announced.

JOHN C. SCHRODER, Longview, president of the East Texas Independent Petrolem Association, is conducting an active membership campaign for his organization. "The only possible way," he says, "to reestablish in the oil industry genuine independence, now so nearly extinct, is to organize."

COMMANDER WILLIAM L. STEWART, JR., vice president of the Union Oil Company, has just transhipped his 55-foot schooner, Santana, flagship of the Los Angeles Yacht Club, to Philadelphia, Pa., where it will be prepared for participation in the biennial ocean race to Bermuda in June. It will be handled by practically the same crew that sailed it to second place in the 1936 race from Los Angeles to Honolulu.

GEORGE A. HILL, JR., was reelected president of the Houston Oil Company at a meeting of the directors in Houston, Tex., last week. Others reelected are: L. S. ZIMMERMAN, vice president and treasurer; R. R. HOBSON, general manager; A. H. KENNERLY, secretary and auditor; GEORGE B. PELTON and H. W. FAIRBROTHER, assistant secretaries; T. S. MAFFITT, chairman executive committee; DAVID HANNAH and L. S. ZIMMERMAN, committee members; GEORGE D. SEARS, general counsel; McDONALD MEACHUM, associate counsel. All these, excepting Mr. Hobson, hold the same offices with the Houston Pipe Line Company. C. LEE WOOD was reelected general manager and auditor of the pipe line company.

PERRY ROBERTS, formerly petroleum engineer for the Honolulu Oil Company, San Francisco, has gone to Houston, Tex., for a stay of indefinite length.

E. J. FISHER, drilling contractor of Albuquerque, N. M., has been asked to serve on the drilling contractors' committee of the International Petroleum Exposition to be held in Tulsa next month.

H. M. MACOMBER, Los Angeles, Calif., general superintendent for the George F. Getty interests, has gone to Rio Bravo, Calif., to witness completion of his company's first well in the 11,300-foot Rio Bravo sand. He was accompanied by D. M. BERNT, chief geologist.

HORTON ABELL, president of the Dry Lake Oil Company, Nampa, Ida., and an operator in the Kevin-Sunburst field of Wyoming, was a recent business visitor in Tulsa. He was accompanied by J. W. SCHOOLEY, former Oklahoma driller and contractor, who is drilling a wildcat in Idaho for the Dry Lake company.

J. R. PEMBERTON, oil umpire for California producers, is expected back in Los Angeles April 15 from an expedition to Mexico and Central America. The umpire is one of a party of scientists aboard the diesel schooner Kinkajou, which has been collecting unusual specimens and making motion pictures of animals in their native haunts.

C. R. SMITH, formerly production engineer in Bartlesville, Okla., for Cities Service Oil Company, has been made district superintendent in Odessa, Tex., to succeed JESS PERKINS, who resigned. L. B. HICKS, production engineer in charge of purchases, succeeded Mr. Smith. FRANK SIDORFSKY, production engineer in charge of repressuring in the Eldorado, Kans., area, took over Mr. Hicks' duties. W. M. CANTRELL, production engineer, went from Madison to Eldorado.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

W. H. McFaddin, one of the owners of the 101 Ranch Oil Company, is elected mayor of Ponca City, Okla.

Waters-Pierce Oil Company pays $470,000 for an 80-acre lease of the Kathleen Oil Company (Sinclair, White & Ufer), in the Cushing, Okla., field.

Secretary of the Interior Lane believes that fuel oil from California will be available to the United States navy for 20 years more, but that by 1933 the production will have seriously declined and will command a high price.

20 YEARS AGO

Texas Rangers have chased out all the undesirable inhabitants of the new oil town of Ranger, Tex.

The Fulcrum Oil Company, of Franklin, Pa., manufactures a lubricating oil for watches, tachometers and other delicate mechanisms that sells for $5.50 for 1½ ounces, or at the rate of $25,000 per barrel. It lubricates when the play in the mechanism is only one-ten-thousandth of an inch.

Alfred J. Diescher, vice president of the Empire Gas & Fuel Company, has been transferred from the Bartlesville, Okla., headquarters to the main headquarters of the Doherty interests in New York.

J. J. Conry has been made general superintendent of the Carter Oil Company succeeding L. W. Young, Jr., recently made president of the South Penn Oil Company.

L. W. Young, Sr., retired oil man, was struck and killed by a street car in Los Angeles, Calif.

10 YEARS AGO

The Hendrick pool in Winkler County, Texas, is producing 225,000 barrels per day.

The average price of 20 representative petroleum stocks on the New York Stock Exchange is $67.21 per share.

Officials of the Sinclair Consolidated Oil Corporation and Prairie Oil & Gas Company deny that any merger of the two companies is under consideration.

L. B. TOBIN, of Los Angeles, Calif., with southern California associates, has filed incorporation papers for the Hollywood Oil Company, capitalized at $100,000.

H. J. HAWLEY, Dallas, Tex., general manager of the Standard Oil Company of Texas, has been transferred to San Francisco to become manager of the exploration division of the parent company, Standard Oil Company of California. A. J. CUNNINGHAM, of Dallas, moved up to take the post vacated by Mr. Hawley. V. G. LUND, of Houston, moved into the post of assistant production manager, vacated by Mr. Cunningham. His headquarters will be in Houston.

LYNN LOCKHART, identified with the Rio Grande Oil Company until it was absorbed by the Sinclair interests, is being urged for governor of Arizona. The Lockhart Brothers built the first oil refinery in Arizona and also one at El Paso and Nogales, Mexico. JAMES MURRAY, of Hobbs, an active oil producer in southeastern New Mexico, active in democratic politics, is being considered for the governorship of his state. In both cases it is pointed out that the oil industry creates the greater part of the revenue for the state and has had little practical representation at the capital.

ROBERT H. COLLEY, president of the Atlantic Refining Company, and a group of associates have finished a tour of Kansas, Oklahoma, Texas and New Mexico oil fields. It was Mr. Colley's first visit to the Atlantic's Kansas properties, developed under the supervision of J. E. HOLM, Tulsa, district manager. Accompanying Mr. Colley were W. M. O'CONNOR, vice president and secretary; P. C. TUTTLE, director and manager of transportation, and J. D. GILL, director. The party was met in Wichita, Kans. by Mr. Holm; E. H. BLUM, vice president and head of the Mid-Continent properies; E. D. LUMAN, chief geologist, and JACK STEWART, division superintendent.

PARAGRAPHS

GLEN W. LEDINGHAM, in the land and lease department of the Western Gulf Oil Company in Los Angeles, has been promoted to assistant geologist in San Joaquin Valley. He will maintain offices in Bakersfield. Mr. Ledingham is president of the Oil Map Revision Association and is a graduate of the University of Southern California.

D. M. COX, New York, and J. C. RICHDALE, Boston, Mass., were elected vice presidents of the Colonial Beacon Oil Company, Inc., at the annual meeting in Boston last week. A. CLARKE BEDFORD continues as president and A. F. WHITING as treasurer. Mr. Cox is in charge of the company's marketing in New York state and Mr. Richdale manages the New England area. Mr. Whiting was elected a director, as was C. G. SHEFFIELD of New York, sales manager of northern division of the Colonial Esso Marketers. Directors elected were F. E. JENNINGS, E. N. WRIGHTINGTON, Mr. Bedford, Mr. Richdale, and Mr. Cox. Colonial Beacon is a member of the Esso Marketers group, including the Standard Oil companies of New Jersey, Louisiana and Pennsylvania.

GEORGE W. JARVIS, president and manager of the Dover Drilling Company, Casper, Wyo., is recovering from a major operation recently undergone in a Denver, Colo., hospital.

CARROLL WAGNER, manager of the geological department of the General Petroleum Corporation, Los Angeles, Calif., has been in Cole Creek, Wyo., checking core recoveries and watching progress on his company's deep test of the structure. MRS. WAGNER accompanied him.

LINCOLN M. ARNOLD and R. C. EARLOUGHER, formerly associated with the Sloan & Zook companies, of Bradford, Pa., as core analysis and water-flooding engineers, have joined the Geologic Standards Company, of Tulsa. Mr. Arnold is a graduate of Ohio State University, and Mr. Earlougher of Colorado School of Mines.

FRED F. WALTERMIRE has been appointed general superintendent of production and drilling in the Continental Oil Company's Gulf Coast division, it was announced from Ponca City, Okla., last Saturday by J. G. DYER, manager of production and drilling east of the Rocky Mountains. T. R. BATTE, JR., was made general superintendent of oil pipe line and terminal operations. Both men will have headquarters in Houston, Tex. The promotions grew out of Continental's expansion in the Texas and Louisiana coastal areas. In the past three years the company has increased its production in the Driscoll, Tex., area; opened up three new fields in Louisiana, where it has more than 24,000 acres under lease; constructed gasoline plants at Basile and Lake Charles, La.; acquired and enlarged a deep-water terminal at Lake Charles, and built an extensive pipe-line system in Louisiana.

A. B. COBB, FRED MANNING, and C. L. PRICE, controlling independent production in the Lance Creek field of Wyoming, met in Casper, Wyo., last week and are reported to have discussed joining in unit development of the Leo sand pool in the Niobrara County, Wyoming, field.

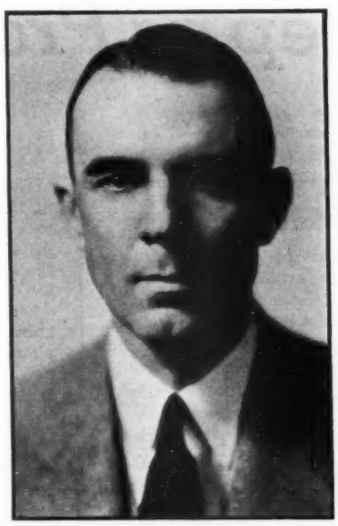
WALTER C. TEAGLE, chairman; W. S. FARISH, president, and EUGENE HOLMAN, head of several producing subsidiaries, represented Standard Oil Company of New Jersey at a conference in Washington last week with Secretary of State Hull over the Mexican oil situation.

C. C. McGUIRE, Memphis, Tenn., area manager for the Shell Petroleum Corporation, presided over a meeting of dealers representing the company in Shelby County and northern Mississippi, held in Memphis last Friday. The program included talks by J. C. MUNRO, division manager; R. D. KIZER, sales manager; E. M. SHELTON, retail merchandising manager; C. H. PATTIE, assistant division manager, and D. deJAHAM, national and consumer accounts manager, all of New Orleans. A banquet and entertainment closed the program.

JUDGE AMOS L. BEATY, head of Amos L. Beaty & Company, Inc., Houston, Tex., has been appointed chairman of the committee on elimination of illegal production sponsored by the Independent Petroleum Association of America, it was announced by H. B. FELL, executive vice president of the association. JOHN KILGORE, Wichita Falls, Tex., is vice chairman. The other members of the committee are P. D. CAREY, Hutchinson, Kans.; W. P. McGINNIS, Indian Territory Illuminating Oil Company, Bartlesville, Okla.; JEFF DAVIS, chief counsel Lion Oil Refining Company, El Dorado, Ark., and C. H. LYONS, Lyons & Prentiss, Shreveport, La. Mr. Fell said the committee would prepare suggestions for laws or amendments to existing laws designed to stop illegal production of oil.

He Grew Up With Gulf

Upon graduating from the Missouri School of Mines in 1919 Philip H. Bohart entered the service of the Gulf Oil Corporation, and he has been in that organization ever since, so in a manner of speaking he has grown up with Gulf. He is now assistant to Rush Greenslade, vice president of the Gulf Oil Corporation, Gypsy Division, and of the Gulf Refining Company. Mr. Bohart's first job was with a geological field crew in North Texas. After a few months he was sent to Tampico, Mexico, to join the Mexican Gulf Company. The succeeding six years gave him practical work in geology, exploration, and production, so that he was prepared for the assignment given him in 1925 to examine and report on properties in the Magdalena Valley of Colombia, South America. That job completed, the young man returned to Tampico, this time as assistant manager of the Mexican Gulf. In 1928 he was made manager.



PHILIP H. BOHART

Fifteen years of diversified experience found Mr. Bohart well fitted for the next step forward, when he was transferred to Tulsa as assistant to Mr. Greenslade, vice president of the Gulf Pipe Line Company of Oklahoma and of the Gypsy Oil Company, producing subsidiary of the Gulf. A year later he himself was made a vice president, which post he held until the change in the Gulf's corporate setup in 1936. Mr. Bohart likes to hunt and fish, and he gets out on the golf links. He is active in technical organizations.

CLIFF MERCER, formerly district supervisor for the Derby Oil Company at McPherson, Kans., has succeeded ED MULLINS as general production superintendent.

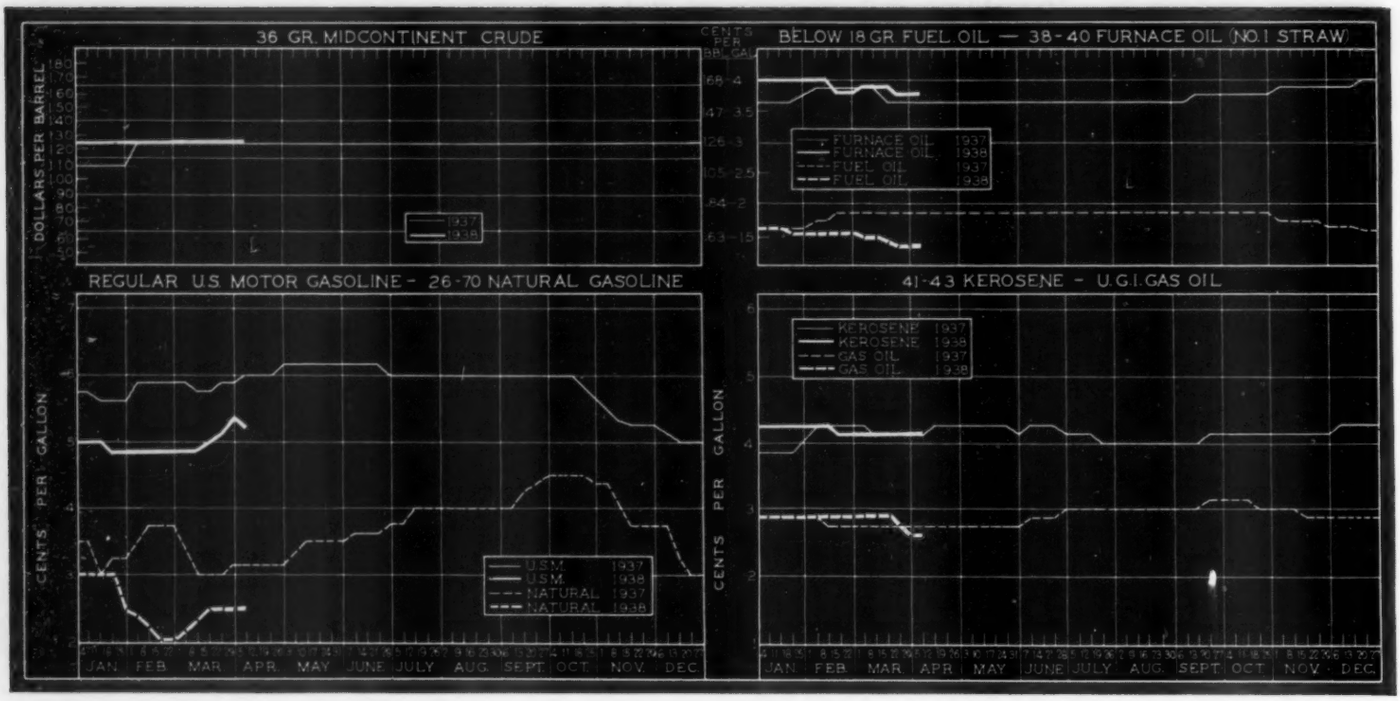
GLENN GARRETT, head of the land department for the Gulf Oil Corporation, Forth Worth district, plans to resume his duties next week after illness of several months.

C. E. (DAN) McGREW, has retired as superintendent of the Magnolia Petroleum Company's pipe line department in the Panhandle district of Texas, after 40 years' service. Magnolia employes of the district honored him with a banquet in Pampa last week.

T. E. SWIGART, St. Louis, Mo., vice president of the Shell Petroleum Corporation, and MRS. SWIGART have booked passage on the Europa, sailing April 14 from New York for London. Mr. Swigart will go on to The Hague, Holland, for a stay of several months.

R. A. CARTER, superintendent of gasoline plants for the Continental Oil Company in Ponca City, Okla., has been in Wichita Falls for the past week completing preliminary details for the construction of a gasoline plant and repressuring project in the K.M.A. field.

C. D. HIER, of the Seismograph Service Corporation, Tulsa, MRS. HIER and their six-month-old daughter, BONNY HIER, left late last week for New York on the first leg of their journey to Batavia, Java. From New York they will sail on the steamship Koto-Pinang, and then will be on the sea 46 days before arriving in Java. There Mr. Hier will take charge of the Netherlands East Indies activities of his company. He plans to remain in Java with his wife and child for about two years. The first crew which Mr. Hier will put to work will leave New York April 12, and will reach Java about two weeks after Mr. Hier's arrival there.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Buying Slump in Group 3 Area Is Not as Abrupt or Deep as Prophesied

By T. F. SMILEY

Refinery sales managers in the Group 3 area admitted with pleasure this week that their predictions concerning the slump that would follow the recent buying spree, set off by announcement of higher freight rates, lacked accuracy. True, orders fell off; but the decline has been distinctly short of expectations. A surprising volume of business has appeared, chiefly of course in gasoline.

Demand Starting to Rise

Notwithstanding unfavorable motoring weather in some districts and discouraging economic conditions, a modest upturn in demand has helped to keep the drop in gasoline movement from being either so abrupt or so extensive as had been forecast. It has become apparent that some jobbers paid no attention to the saving which would be achieved by stocking up before the addition on March 28 of about 10 per cent to railroad transportation costs. They adhered to their regular buying schedules, and their orders have been coming in as usual. Some of the business has been leftovers from the buying orgy—orders that got in too late to catch the old freight rates.

This period of expected quiet has been chosen by some refiners to close their plants for repairs, thus eliminating runs to stills and imparting a steadier tone to the market. Contributing to better feeling too was the Bureau of Mines announcement that gasoline stocks, instead of climbing to new highs, had begun falling.

As pleasant weather spreads to wider areas and as gasoline supplies stored under the old freight rates run low, motor fuel demand, refiners say, will hit its normal summer stride. If the large companies which own excessive stocks curb their plant operations and refrain from throwing more material on the market than it can absorb, a satisfactory season is believed to be in prospect.

Tractor fuels were the really animated group of refinery products this week. Good plowing conditions arrived almost a month earlier than usual, with the result that refiners were not prepared for the sudden onset of orders. Material was reported moving in heavy volume. Many refiners are making 40-42 tractor fuel instead of prime-white distillate. Much kerosene and low-octane gasoline are going to rural regions for tractor use, and both were strong.

Refined Oil Market Barometer

Notwithstanding gasoline inventories far in excess of needs, indications point to an increasingly healthy condition and probability of satisfactory summer business. Most of the independent refiners in interior areas are believed to have only fair working stocks. Demand for tractor fuel is absorbing virtually the entire output of kerosene, light-gravity distillate and low-octane gasoline.

MID-CONTINENT. Gasoline steady. Tractor fuel vigorous. Naturals holding.

EAST COAST. Bunker fuel oil off sharply. Gasoline firmer. Diesel fuel steady.

GULF COAST. Gasoline slightly brighter. Kerosene and heavy fuel oils sluggish.

CALIFORNIA. Gasoline, diesel, and fuel oil soft. General market listless.

PENNSYLVANIA. Movement of refiners to cut runs promises healthier conditions.

CHICAGO. Gasoline quiet. Tractor fuel brisk. Heavy fuels dull.

Although natural gasoline now is in its season of low consumption, it was exhibiting a firmer tone this week, with quotations tending to work a little higher. This was accounted for by the fact that the large manufacturers must get ready now for demands that will be made on them next fall, when refiners begin making winter fuel. They know requirements then cannot be met from field plants, so they are storing much of their surplus now. They say it is better to do that than to sell at the current low prices and then find themselves short next fall, when prices should yield a reasonable profit.

Taking Care of Regular Customers

Prevailing prices represent little or no profit for companies with heavy overhead expenses, so they are making no effort to do more than take care of regular customers. The result is that a jobber with no established connection has difficulty in obtaining natural gasoline at the ruling quotations. Actually a wide diversity of prices was reported in the past week. A few sales of 26-70 were said to have been made at 2⅞ cents and of 18-pound at 3⅜ cents. Only small quantities were involved—too small to be representative of the market—but they were significant of the rather mixed character of the market.

Neutrals and bright stocks showed little change from the dullness which has gripped them for months, though some sales managers expressed belief that slightly increased firmness had resulted from recent plant shutdowns and curtailments. Stocks were receding, it was said, and a healthier condition was in the making. Wax was off, and movement was negligible even at the lower quotations. The whole range of heating oils was listless. Heavy industrial fuels were sluggish.

Bunker Fuel Oil Prices Lower in Atlantic Coast Market

By H. STANLEY NORMAN

NEW YORK, Apr. 5.—Bunker C fuel oil prices were dropped 10 cents per barrel today in New York and other North Atlantic ports. The new price, first posted by Standard Oil Co. of New Jersey, is $1.05 per barrel in New York. Bunker oil in bond was reduced 5 cents, making the New York price 95 cents.

It was expected that Standard Oil Co. of Louisiana would reduce the Gulf Coast price 5 cents to 80 cents.

The latest reductions in Bunker C fuel oil prices were assigned to two causes, a further decline in tanker rates and competitive conditions brought about by reduced industrial consumption.

Bunker C fuel oil was reported available in bulk cargoes on the Gulf Coast at 70 to 75 cents per barrel.

The eastern seaboard motor fuel market staged its first rally of the consuming season last week permitting the refining industry to enter April with nearly 3,000,000 bbls. less gasoline on hand than previously had been predicted for start of the second quarter.

The immediate result of improvement in motor fuel movement was an upward adjustment of markets in subnormal areas. Tank-car and tank-wagon prices in Boston and other important consuming centers of New England were advanced a half-cent per gallon by Socony-Vacuum Oil Co., Inc., and the retail shading in New York had almost disappeared on April 1. With only a few scattered exceptions, New York retail postings were stabilized at 19 cents for regular gasoline, including 5 cents state and federal tax. During the middle of March there had been a general reduction to 18 cents in the five New York boroughs.

There has been no marked change in the tankcar market along the Atlantic seaboard south of the New England area. Less motor fuel, however, is currently offered at 6½ cents, the low of the market, than was available during the first three weeks of March and most of February. Indications are that 6¾ cents will soon be established as the low of the tankcar market for 65-octane motor fuel. Most of the large refiners are holding quotations on their branded products at 7¼ to 7½ cents, but scarcely any material moves under the conditions applicable.

Probably the season's most favorable motoring weather prevailed over the past week-end and consumption responded accordingly. Most of the golf courses, several of the public picnic and outing reservations and amusement parks are now open, conditions which mean heavier gasoline demand. Although the gasoline market appears headed for better days, the path ahead was not lacking in obstacles. The heavy fuel oil situation in particular is far from encouraging and warmer weather is lowering light fuel oil consumption. Kerosene is available in the New York market at 5½ cents per gallon to tankcar customers and barge deliveries can be obtained for an eighth-cent less. Light fuel oil for domestic burners is generally quoted at 4½ cents to the tankcar trade with occasional shading by some of the smaller dealers. Tank-wagon consumers of light fuel oil are billed at 6½ to 7 cents currently, but as in other slack seasons, concessions to clean up stocks for the summer are numerous.

Consumption of heavy fuel oil by factories and railroads has been particularly disappointing. The collapse of fuel oil consumption in January during which demand was off 11 per cent in light and 14 per cent in heavy products continued during February and March. Consequently, the rise in light and residual fuel oil stocks has been maintained during the past few weeks. Marine consumption is holding up reasonably well, but the contraction of demand from shore plant consumers is making more material available to ship owners at prices even below contract levels.

Diesel fuel oil appears to be on firm ground at $1.85 per barrel in the New York market. The increase in units in service requiring diesel fuel for power is sufficient to offset any contraction of the per motor consumption. Furthermore, diesel fuel oil prices were adjusted downward at most eastern coast points during the past three weeks taking up most of the slack that had developed during the later stages of winter. Most marketers are anticipating a favorable diesel fuel consumption season next summer from fishing and pleasure marine crafts as well as in general commercial channels where adoption of the oil engine has been increasing.

The first indication that the Gulf Coast motor fuel market may be stimulated by expropriation of privately owned oil properties in Mexico came last week. However, the trade was not in position to determine definitely whether Mexican developments can be considered responsible for the increased Gulf Coast export activity. It was generally reported that one of the companies deprived of its properties in Mexico was seeking two cargoes of motor fuel in the open market.

The fact that exporters have been almost completely withdrawn from the market for the past six weeks was not without significance. Indications are that traders had remained aloof from the market during the dull period trying to buy at the absolute low of the swing. With domestic conditions improving, entry of exporters on the buying side of the market was not considered unusual and, therefore, observers were reluctant to assign any particular cause to the improvement. French customers were inquiring for two cargoes of gasoline and other European representatives were buying or testing the market as the week closed. Gulf Coast suppliers, in general, elevated their quotations an eighth of a cent in response to the season, the inquiries reaching the trade and the prospects that open market dealers are in need of new supplies. A firm offer of 5⅛ cents for 375 e. p. motor fuel was reported to have gone begging during the past week and most suppliers were quoting 5⅜ to 5½ cents on material of this grade.

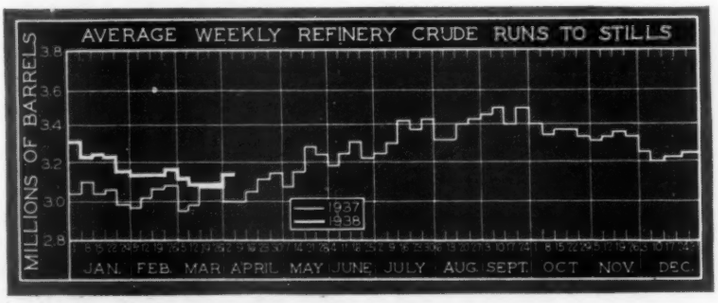
Coastwise movement of motor fuel lacked new features. Considerable gasoline of minimum 65-octane rating is offered for coastwise movement at 5⅜ cents, which is a contributing cause for relatively little change in the north Atlantic tank-wagon structure. Tanker rates are reported slightly improved over the preceding week, but a vessel was chartered for a gasoline cargo to north of Cape Hatteras during the week at 17½ cents per barrel. There had been reports of fixtures during the third and fourth weeks of March at 15 to 16 cents per barrel. No improvement has been noted in the dirty boat market.

A. P. I. Weekly Refinery Statistics

Week Ending April 2, 1938

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	517,000	22,934,000	9,347,000
Appalachian	88.4	103,000	3,551,000	1,291,000
Indiana, Illinois, and Kentucky	92.4	409,000	15,394,000	7,158,000
Oklahoma, Kansas, and Missouri	84.7	261,000	7,893,000	3,432,000
Inland Texas	56.6	128,000	2,678,000	1,584,000
Texas Gulf	95.7	734,000	13,740,000	8,246,000
Louisiana Gulf	96.6	128,000	2,721,000	2,812,000
North Louisiana and Arkansas	63.7	36,000	487,000	514,000
Rocky Mountains	69.7	40,000	2,296,000	785,000
California	90.9	512,000	16,270,000	85,952,000
Total reported	89.0	2,868,000	87,964,000	121,121,000
Estimated unreported	.....	277,000	4,960,000	2,500,000
*Estimated total	.....	3,145,000	92,924,000	123,621,000
*Estimated total, previous week	.....	3,080,000	92,858,000	122,969,000
*April 3, 1937	.....	3,005,000	82,408,000	95,173,000

*Bureau of Mines, currently estimated.



Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending March 26, 1938	307,557,000 barrels
Week ending March 19, 1938	306,380,000 barrels
Week ending March 27, 1937	296,525,000 barrels

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of April 5, 1938

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Dlr.	Inc. tax	Kero. tank-wag.
Chicago, Ill.	15 6	13 6	4 0	10 5
Decatur	15 6	14 1	4 0	10 5
Joliet	15 6	14 1	4 0	10 5
Peoria	15 6	14 1	4 0	10 5
Quincy	15 4	13 9	4 0	10 3
Davenport, Ia.	15 6	14 1	4 0	‡10 5
Des Moines	15 4	13 9	4 0	‡8 3
Mason City	15 8	14 3	4 0	‡10 7
Sioux City	15 6	14 1	4 0	‡10 5
Duluth, Minn.	17 4	15 9	5 0	11 3
Mankato	17 0	15 5	5 0	10 9
Minneapolis	17 0	15 5	5 0	10 9
LaCrosse, Wis.	17 0	15 5	5 0	10 9
Green Bay	17 4	15 9	5 0	10 3
Milwaukee	16 8	15 3	5 0	10 7
Detroit, Mich.	15 3	13 8	4 0	10 0
Grand Rapids	16 5	13 3	4 0	11 2
Saginaw	16 3	14 8	4 0	9 3
Evansville, Ind.	17 1	15 6	5 0	†11 0
Indianapolis	17 3	15 8	5 0	†11 2
South Bend	17 6	16 1	5 0	†9 4
Fargo, N. Dak.	17 2	15 7	4 0	12 1
Minot	18 5	17 0	4 0	13 4
Huron, S. Dak.	17 5	16 0	5 0	11 4
Kans. City, Mo.*	14 9	13 4	4 0	9 8
St. Louis*	15 2	13 7	4 0	10 1
St. Joseph*	14 9	13 4	4 0	9 8
Wichita, Kans.	14 4	12 9	4.0	8.3

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective Dec. 7, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.3 cents. Stanolex No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7 cents. Stanolex furnace oil, 1-149 gallons, 7.8 cents; 150 gallons and over 7 cents; Stanolex A, 1-399 gallons, 5.75 cents; 400 gallons and over, 4.75 cents. Stanolex B, 1-799 gallons, 5.75 cents; 800 gallons and over, 4.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Tank-wag. dlr.	Tank-car con'r.	Inc. tax	Kero. tank-wag.
Atl'tic, City, N. J.	12.75	11.25	4.0	8.5
Newark	12 75	11.25	4 0	8.5
Annapolis, Md.	14.85	13.35	5 0	9 5
Baltimore	14.25	12.75	5 0	9 0
Cumberland	16 65	14.15	5 0	10 0
Wash'g'n, D. C.	12 5	11.0	3 0	9 5
Danville, Va.	16.95	14.45	6.0	12.9
Norfolk	15.75	13.25	6.0	11.5
Petersburg	16.05	13.55	6.0	11.7
Richmond	16.05	13.55	6.0	11.7
Roanoke	17.25	14.75	6.0	12.9
Charles'n, W. V.	17 05	14 55	6 0	12 6
Parkersburg	15 35	13 85	6 0	11 2
Wheeling	16 25	14 85	6 0	12 2
Charlotte, N. C.	18 65	16 15	7 0	12 6
Hickory	19 15	16 65	7 0	13 0
Mt. Airy	18 95	16 45	7 0	12 8
Raleigh	18 25	15 75	7 0	12 1
Salisbury	18 75	16 25	7 0	12 7
Charleston, S. C.	17 25	14 75	7 0	11 1
Columbia	18 25	15 75	7 0	12 1
Spartanburg	18 95	16 45	7 0	12 9

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be the equivalent to the dealer price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline Tank-wag.	Net dlr.	Inc. tax	Kero. tank-wag.
Atlanta, Ga.	21 0	18 0	7 0*	†14 0
Augusta	21.0	18 0	7 0	*14 0
Macon	21.0	18.0	7.0	*14.0
Savannah	19 5	16 5	7 0	*12 0
Birm'ham, Ala.	21.0	18.0	8.0	12.0
Mobile	21.0	18 0	9.0	†11.0
Montgomery	22 0	19 0	9 0	†13 0
Jackson, Miss.	19.5	16.5	7.0	*13.0
Vicksburg	19.5	16.5	7.0	*13.0
Jacks'ville, Fla.	22 5	17 5	8 0	†11 0
Miami	20 5	17 5	8 0	†12.5
Pensacola	22 0	19 0	9 0	12 0
Tampa	20 5	17 5	8 0	10 5
Lexington, Ky.	19.0	16.0	6.0	11.0
Covington	18 5	15 5	6 0	11.0
Louisville	19 0	16 0	6 0	10 5
Paducah	17.0	14 0	6.0	10.0

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Kerosene prices in all states subject to 2 cents discount except in Kentucky where prices are net.

*Includes 1-cent state tax. †Subject to 2-cent discount.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Dealer	Inc. tax	Kero. tank-wag.
Denver, Colo.	14 0	5 0	11 5
Grand Junction	19 0	5 0	15 0
Pueblo	13.0	5.0	10.5
Casper, Wyo.	17.0	5 0	11.5
Cheyenne	16 0	5 0	13 0
Butte, Mont.	19 5	6 0	15 5
Billings	19 5	6 0	15 5
Helena	19 5	6 0	15 5
Great Falls	19 5	6 0	15 5
Salt Lake City, Utah	19 5	5 0	16 0
Twin Falls, Ida.	21 0	6 0	18 0
Boise	21 5	6 0	18 0
Albuquerque, N. M.	17.5	*6.5	12.0

*Includes city tax of one-half cent.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank-wag.	Dlvided con'r. dlr.	Inc. tax	Kero. tank-wag.
Ohio points	16 5	15 5	5 0	*13 0

*Includes state tax of 1 cent.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Tank-wag. dlr.	Tank-car con'r.	Inc. tax	Kero. tank-wag.
Albany, N. Y.	14.5	12.5	5 0	9 0
*Met. N. Y.:				
M'nh't'n, Br'nx	14 5	12 5	5 0	8 75
Staten Island	14 5	12 5	5 0	8 75
Q'ns. & Brklyn	14 5	12 5	5 0	8 75
Buffalo	14.5	13.54	5.0	7.5
Rochester	15 0	13 17	5 0	8 5
Syracuse	14 5	13 12	5 0	9 0
Boston, Mass.	13 0	11.5	4 0	8.5
Portland, Me.	14 5	12 7	5 0	8 75
Manch'ter, N.H.	15 0	13 0	5 0	9 0
Burlington, Vt.	14.9	12 9	5 0	9 5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer. Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon prices at delivery point.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank-wag.	Serv. sta.	Inc. tax	Kero. tank-wag.
San Francisco	17 5	18 5	4 0	11.5
Los Angeles	17 0	18 0	4 0	10 0
Fresno, Calif.	18 5	19 5	4 0	12.5
Phoenix, Ariz.	21 0	22 0	6 0	*17.0
Reno, Nev.	20 0	21 0	5 0	13.0
Portland, Ore.	20 0	21 0	6 0	13.5
Seattle, Wash.	20 0	21 0	6 0	13 5
Spokane	22 5	23 5	6 0	16 0
Tacoma	20 0	21.0	6.0	13.5

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Drl.	Inc. tax	Kero. tank-wag.
Omaha	18 0	16 5	6 0	10 8
McCook	17 8	15 3	6 0	10 3
Norfolk	18 4	16 9	6 0	10 3
North Platte	18 8	15 2	6 0	11 2
Scotts Bluff	19 5	16 3	6.0	12 3

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Tank-wag. dlr.	Tank-car con'r.	Inc. tax	Kero. tank-wag.
N. Orleans, La.	19 0	16 5	*10 0	†12.0
Baton Rouge	17 0	14 5	8 0	12.0
Alexandria	17 5	15 0	8 0	10.5
Lafayette	18 0	15 5	8 0	12.5
Lake Charles	18 0	15 5	8 0	12.5
Shreveport	16 5	14 0	8 0	9.5
Kn'ville, Tenn.	20 0	17 5	8 0	14.0
Memphis	18 0	15 5	8 0	12.0
Chattanooga	19 5	17 0	8 0	13.5
Nashville	19 0	16 5	8 0	10.5
Bristol	19.0	17.75	8.0	14.5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon.

Louisiana kerosene prices include 1-cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank-wag. dlr.	Tank-car con'r.	Inc. tax	Kero. tank-wag.
Philadelphia, Pa.	13.75	12.25	5.0	10.5
Pittsburgh	15 0	13 0	5 0	11 0
Allentown	14 25	12 75	5 0	11 0
Erie	14 5	13 0	5 0	10 0
Scranton	14 5	13 0	5 0	11 0
Altoona	15 0	13 0	5 0	11 0
Dover, Del.	14 0	....	5 0	11 0
Wilmington	14 0	....	5 0	11 0
Springf'd, Mass.	13 5	....	4 0	8 5
Worcester	14 3	....	4 0	9 0
Hartford, Conn.	13 6	....	4 0	8 0
New Haven	13 5	....	4 0	8 0
Providence, R. I.	13.3	....	4 0	8 5

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Dealer	Inc. tax	Kero. tank-wag.
Muskogee, Okla.	14 5	5 0	7.0
Oklahoma City	14 0	5 0	8.0
Tulsa	14 0	5.0	6.0
Ft. Smith, Ark.	14.25	5.0	8.0
Little Rock	17.25	7.5	9.5
Texarkana	14.0	5.0	8.5

Texas

	Gasoline Tank-wag.	Serv. sta.	Inc. tax	Kero. tank-wag.
Dallas, Tex.	14.0	18.0	5.0	8.0
Fort Worth	14 0	18 0	5 0	8.0
Houston	14 5	19 0	5 0	8.0
San Antonio	13.5	17.5	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16 0
Cleaners' naphtha	15 0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3 Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wax
Halifax, N. S.	24 5	10 0	18.5
St. John, N. B.	24 5	10.0	18.5
Montreal, Que.	21 0	6 0	17.5
Toronto, Ont.	22 0	6 0	17.0
Hamilton, Ont.	22 0	6 0	17.0
Winnipeg, Man.	27 5	7 0	20.7
Brandon, Man.	28 1	7 0	22.3
Regina, Sask.	27 0	7 0	22.0
Saskatoon, Sask.	29 8	7 0	24.9
Edmonton, Alta.	26 5	7 0	21.5
Calgary, Alta.	24 0	7 0	19.0
Vancouver, B. C.	23 0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon price. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Retail Price Changes

Standard Oil Co. (Indiana) March 28 advanced tank-wagon and dealer gasoline and tank-wagon kerosene .3 cent at all points in its territory except as follows: .2-cent advance at Detroit, Grand Rapids, and Saginaw; .4 cent advance at Duluth, Green Bay, Huron, Indianapolis, Mason City, and South Bend; .5 cent advance at Fargo; .6 cent advance at Minot; and 1.3-cent advance in tank-wagon kerosene at Wichita.

Standard Oil Co. of Ohio April 4 advanced tank-wagon and dealer gasoline .5 cent at all points on its statewide schedule.

Standard Oil Co. of Nebraska March 31 advanced tank-wagon and dealer gasoline and tank-wagon kerosene .3 cent at all Nebraska points.

Map of Illinois Fields

M. M. Leighton, of Urbana, Ill., chief of the Geological Survey division of the State Department of Registration and Education, stated today that his division has prepared a large wall map showing the location and known size of all oil and gas fields in Illinois discovered prior to November 12, 1937.

All oil and gas fields are named on the map and separate symbols indicate whether or not they are productive or abandoned. Pipe lines are identified by company ownership; locations of pump or compressor stations and refineries are indicated, and also, the locations of isolated producing wells and recent wells which have shown oil sand saturation at a distance from producing fields.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of April 5, 1938

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below	.04⅜	.04½
63-66 octane	.04⅝	.04¾
67-69 octane	.04⅞	.05
70-72 octane (regular)	.05¼	.05⅜
60-62 400 grades:		
62 oct. and below	.04⅜	.04½
63-66 octane	.04⅝	.04¾
67-69 octane	.04⅞	.05
70-72 octane (regular)	.05¼	.05⅜
64-66 375	.04¾	.04⅞
68-70 360	.05	.05⅛

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04⅜	.04½
63-66 octane	.04⅝	.04¾
67-69 octane	.04⅞	.05
70-72 octane (regular)	.05¼	.05⅜
60-62 400	.04⅜	.04½
64-66 375	.04¾	.04⅞

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)

U. S. Motor grades:		
62 octane and below	.04¼	.04½
63-66 octane	.04⅝	.04¾
67-69 octane	.04⅞	.05
70-72 octane (regular)		.05½

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
62 octane and below	.04¼	.04½
67-69 octane	.04⅞	.05
70-72 octane (regular)	.05½	.05⅝

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04⅜	.04⅝
63-66 octane	.04⅝	.04⅞
67-69 octane	.04⅞	.05⅛
70-72 octane (regular)	.05⅛	.05½
60-62 400 grades:		
62 octane and below	.04⅜	.04⅝
63-66 octane	.04⅝	.04⅞
67-69 octane	.04⅞	.05⅛
70-72 octane (regular)	.05⅛	.05½
64-66 375	.04¾	.05
68-70 360	.05	.05⅛

PENNSYLVANIA (Inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.04⅞	.05½
65 octane	.06⅛	.06½
68-70 octane	.06⅝	.07⅛

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06¾	.08¼
58-60 400, 65 oct. and higher	.08½	.09¼

EAST COAST (Domestic)—

U. S. Motor, 60-64.9 octane:		
New York (Bayonne)	.06¼	.06½
Philadelphia	.06¼	.06½
Boston	.06½	.06¾
Baltimore	.06½	.06¾
Charleston, S. C.	.07	.07¼
U. S. Motor, 65 and above:		
*New York (Bayonne)	.06½	.07
Philadelphia	.06½	.07
Boston	.06¾	.07
Baltimore	.07	.07¼
Charleston, S. C.	.07¼	.07½

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05	.05¼
60-64.9	.05¼	.05⅜
65 octane and higher	.05½	.05¾

Naphtha

PENNSYLVANIA (Inland refineries)—

52-56 450 (blending)	.04¾	.05

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.02½	.02⅝
Grade 18-55	.03	.03¼

NORTH TEXAS—

Grade 26-70		.02⅝
Grade 18-55	.03⅛	.03¼

CALIFORNIA—

75-85 375-390	.06½	.07

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70		.03

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110 flash, 540-550 e.p.	.04⅛	.04¼
41-43 gr., 300-520 i.b.p., 110-125 flash, 500-520 e.p.	.04¼	.04⅜
46-48 gr., 210-230 i.b.p., 480 max. e.p.	.04⅝	.04¾

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04⅛	.04⅜
42-44	.04¼	.04½

NORTH TEXAS—

41-43	.04⅛	.04¼

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.04⅜	.04½

ARKANSAS (Ark., N. La., Miss. del.)—

41-43	.04½	.04⅝

PENNSYLVANIA (Inland refineries)—

45	.05⅛	.05¼
46	.05¼	.05⅜
47	.05⅜	.05½

CHICAGO (Based on Group 3)—

41-43	.04⅛	.04⅜
42-44	.04⅜	.04⅝

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.05¼	.06½

NEW YORK (Bayonne, N. J.)—

41-43		.05¾

***GULF COAST (domestic)—**

41-43	.04⅝	.04¾

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.04	.04⅛
No. 1 prime white, 38-42	.03⅞	.04
No. 1 straw, 38-40	.03¾	.03⅞
No. 2 straw, 32-36	.03½	.03⅝
No. 2 dark, 32-36	.03⅜	.03½
No. 3 zero to 15, 28-32		.03⅜
No. 3, 15 and above, 28-32	.03	.03⅛

NORTH TEXAS—

No. 1 prime white, 38-42	.03⅞	.04
No. 1 straw, 38-40	.03¾	.03⅞

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03½	.03⅝

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36	.03¾	.03⅞

CHICAGO (Based on Group 3)—

Range oil	.04	.04⅛
No. 1 prime white, 38-40	.03⅞	.04⅛
No. 1 straw, 38-40	.03¾	.03⅞
No. 2 straw, 32-36	.03⅝	.03¾
No. 2 dark, 32-36	.03⅝	.03⅝
No. 3, zero to 15, 28-32	.03⅜	.03½
No. 3, 15 and above, 28-32	.03	.03⅛

NEW YORK (Bayonne, N. J.)—

*No. 1		.05¾
*No. 2		.04¾
*No. 4		.04¾

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅝	.02⅞
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.72½	.77½
Below 18 fuel oil, industrial	.55	.60

NORTH TEXAS—

U.G.I. gas oil	.02⅝	.02¾
No. 4, low cold test, 24-28	1.10	1.15
No. 5, low cold test, 18-22	.72½	.77½
Below 18 fuel oil, industrial	.55	.60

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

10-14 fuel oil, industrial	.80	.85

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02⅞
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.72½	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low cold test, 10-16	.60	.70
No. 6, 15 and above, 10-16	.42½	.55

PENNSYLVANIA (inland refineries)—

36-40	.04⅜	.04½

CALIFORNIA

Los Angeles:		
30-40 gas oil, per bbl.	1.30	1.50
24 plus diesel, per bbl.	1.30	1.50
24 plus diesel (bunkers)	1.35	1.55
12-16 (bunkers at tidewater)	.90	1.00
10-16 (cargo lots)	.80	1.00
12-17 (tankcars)	.70	1.00
10-17 (high sulfur)	.60	.95
San Joaquin Valley:		
10-18 (tankcars)	.60	.85
24 plus diesel, per bbl.	1.30	1.50
San Francisco:		
24 plus diesel, per bbl.	1.45	1.55
24 plus diesel (bunkers)	1.55	1.65
10-16 (bunkers)	1.00	1.05

GULF COAST—

28-30 gas oil	.04⅛	.04¼
28-30 diesel (bunkers)		1.75
Bunkers (bulk cargoes)		.75
Bunker C (bunkers)		.85

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¾
28-30 diesel (lighterage 6¼c per bbl.)		1.85
28-30 diesel (tankcars)	.04¾	.05
Bunker C (to ocean-going ships in N. Y. harbor)		1.10
Industrial fuel (tankcars)	.04	.04¼

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

Bright Stocks:		
190-200 D, 15-25		.19
150-160 D, 0-10		.16
150-160 D, 15-25		.15
150-160 E, 15-25		.14½
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.13½
600 dark green (untreated)		.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour test	.18½	.19½
15 pour test	.17½	.18½
20 pour test	.16½	.17½
25 pour test	.15½	.16½
Steam refined:		
600	.08½	.09
650	.10½	.11½
600 Pennsylvania flash	.11	.13
630 flash	.14	.15
600 Warren E filtered	.13	.14

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:		
150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-3½		.13
400-3½		.14
100-2½ paraffin oil		.06
15-20 Cold Test:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.11½
280-3		.12
280-4		.11½

GULF COAST—

Pale Oils:		
200-3	.07	.07¼
300-3	.07½	.07¾
500-3½	.08½	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red Oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale Oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red Oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° F. color, 400-405 flash:		
Zero pour test	.17½	.18
10 pour test	.16½	.17
15 pour test	.16	.16½
25 pour test	.15	.15½
180 vis. at 70° F., 3 color:		
25 pour test	.16	.16½
200 vis. at 70° F., 3 color:		
Zero pour test	.20½	.21
10 pour test	.19½	.20
15 pour test	.19	.19½
25 pour test	.17	.17½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02⅛	.02¼

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0195	.0200
124-126 (a.m.p.) w.c. scale	.0195	.0200

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0420
125-127 (a.m.p.) wax		.0435
128-130 (a.m.p.) wax		.0445
130-132 (a.m.p.) wax		.0455
133-135 (a.m.p.) wax		.0500
135-137 (a.m.p.) wax		.0515
124-126 (a.m.p.) w.s.	.0205	.0215
124-126 (a.m.p.) y.s.	.0200	.0210
Petrolatum in barrels, carload lots:		
Dark green	.02	.02⅛
Amber	.02⅜	.02½
Extra amber	.02⅝	.02¾
Lily white	.02⅛	.05¼
Snow white	.06⅛	.06¼
Cream	.04⅛	.04¼

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.04¾	.04⅞
60-62 400	.04¾	.04⅞
61-63 390	.04⅞	.05
64-66 375	.04⅞	.05

LOS ANGELES—

U. S. Motor grades:		
55-65 octane	.05¼	.05½
65-69 octane		.05¾
Above 69 octane		.06¼

KEROSENE

GULF COAST—

41-43 prime white	.04¾	.04⅝
41-43 water white	.04½	.04¾
44 water white	.04⅞	.05

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.b. in bbls.)—

Cylinder Stocks:		
600 Warren E	.20½	.21
600 S.R. unfiltered	.16	.16½
630 S.R. unfiltered	.18	.18½
600 flash S.R.	.18½	.19
630 flash, S.R.	.21½	.22
Bright Stocks:		
8 color	.23	.23½
6½ plus color in dilution	.22½	.23

NEUTRAL OIL

200-3 color	.24½	.25
150-3 color	.22½	.23

PARAFFIN WAX

NEW YORK (prices per pound)—

123-126 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude Scale:		
124-126 w.s.	.0205	.0215
124-126 y.s.	.0200	.0210

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

(Effective January 28, 1937)

East Texas (May 22, 1937)*	$1.35
Van, Tex.†	1.10
Camp Hill, Tex.	1.27
Cass County, Tex.‡	1.25
Talco	.73
Altus and Tipton, Okla.§	1.20
Other fields (see gravity table).	

*All companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

North Louisiana and Arkansas

Smackover, all grades	$ .90
Tullos and Urania	1.02
El Dorado East field	.90
Union County, Ark.	.90
Ouachita County, Ark.	.90
Lisbon, La. (Dec. 13, 1937)*	.98

*Caddo Crude Oil Purchasing Co.

Gulf Coast

(Effective January 28, 1937)

Choctaw and Darrow, La. See note below	
Clay Creek, Tex.	$1.00
Garden Island, La.	1.37
Cleveland, Tex.	1.27
Hardin, Tex.	1.15
Lafitte, La.	1.24
Livingston, Tex.	1.27
Welsh, La.	.98
Tepetate (La.) (Jan. 28, 1937)	1.24

Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36. Effective October 1, 1937, Stanolind Oil & Gas Co. in Evangeline, La., pays 92 cents for below 20 gravity, adding 2 cents for each degree upward to 40 and over, at $1.34.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1.18
Iles, Colo., heavy*	1.12
Greybull, Wyo.*	1.30
Torchlight, Wyo.*	1.30
Grass Creek, Wyo., light*†	1.30
Grass Creek, Wyo., heavy (Nov. 4, 1936)*†	.62
Hamilton Dome, Wyo. (Jan. 1, 1937)*	.67
Elk Basin, Wyo., light*†	1.30
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light	.70
Hogback, N. M. (Jan. 28, 1937)*	1.33
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†‡	1.23
Rock Creek, Wyo.†	1.20½
Lea County, N. M. (see West Texas gravity table).	
Artesia, N. M. (Jan. 28, 1937)‡	.90
Maljamar, N. M. (Jan. 28, 1937)‡	.90
Canon City and Florence, Colo.	1.10
Lance Creek, Wyo.	.97
Lander, Wyo. (Jan. 1, 1938)¶	.51¼
Sunburst, Mont. (Nov. 16, 1937)†	.90
Cat Creek, Mont. (Jan. 1, 1938)‡	$1.30
Garland, Wyo. (Jan. 1, 1937)†	.50

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. ¶Hudson Oil Co.

Middle Western States

OHIO OIL CO.
(Effective January 28, 1937)

Lima	$1.00
Illinois	1.35
Princeton, Ind.	1.35
Midland, Mich. (Jan. 5, 1938)*	1.12
West Branch, Mich. (Dec. 29, 1937)†	.80
Buckeye (Jan. 8, 1938)	1.09½
Arenac, Mich. (Dec. 29, 1937)†	.80
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River	1.42
Kentucky River	1.50
Western Kentucky	1.40

*Posted by Pure Oil Co.
†McClanahan P. L. and Simrall.
Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

West Texas

See gravity table.	
Pecos County*	$ .91
Pecos shallow†	.81

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Southwest Texas

(Effective January 28, 1937)

Pettus	$1.37
Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.09
Lytton Springs	1.12
Luling	1.00

Saxet and Taft take same gravity table as Gulf Coast.

Eastern States

TIDE WATER ASSOCIATED OIL CO.
(Effective March 7, 1938)

Bradford, Pa.	$2.05
Allegany, N. Y.	2.05

SOUTH PENN OIL CO.
(Effective March 7, 1938)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2.05
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.71
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.65
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.55
Corning Grade Oil in Buckeye Pipe Line Co.'s lines	1.27

PENNZOIL CO.
(Effective March 7, 1938)

Pennsylvania Grade Oil in National Transit Lines:	
Group A Includes Cochran, Franklin, Hamilton and Doolittle districts.	1.98
Group B Includes Tidioute district.	1.97
Group C Includes Turkey and Tidioute districts.	1.96
Group D Includes Bear Creek and Porkey districts.	1.95
Group E Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	1.93

PURE OIL CO.
(Effective March 7, 1938)

Cabin Creek, W. Va.	$1.65
Bradford Hollow, W. Va.	1.65
Kelly Creek, W. Va.	1.65

Canada

Ontario (Sept. 9, 1933)*

Petrolia	$2.10
Oil Springs	2.17

TURNER VALLEY NAPHTHAS AND CRUDE OIL
(January 5, 1938, by Imperial Oil, Ltd.)

Clear naphtha and discolored naphtha, 65 gravity and higher	$2.14
Discolored naphtha and crude oil, 40-40.9 gravity	1.14
Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity	1.62

These prices f.o.b. producers field tankage.
*Imperial Oil, Ltd.

Mexico

Heavy Mexican crude	$.85

*In U. S. Currency, f.o.b. ship, based on February spot market transactions.

Crude Prices by Gravities

	Oklahoma-Kansas	Oklahoma-Kansas	North and Central Texas	East Central Texas (Mexia district)	North Louisiana-Arkansas	Gray County, Texas	Hutchinson-Carson counties, Texas	Rodessa, Louisiana-Texas and Panola County, Texas	Conroe, Tomball, Raccoon Bend, (Deep) Satsuma	Gulf Coast	Gulf Coast	Lea County, N. Mex. West Texas except Pecos County	Mirando district, Texas	Marion County, Texas	Refugio, Greta, Saxet, Taft, Texas	Anahuac, Flour Bluff, Dickson, Turtle Bay	White Castle, Louisiana	Iowa, Louisiana	Cayuga, Texas
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Bel. 18	....	....	....	....	....	....	....	....	....	$.90	....	....	....	....	....	....	....	$.90	....
18-18.9	....	....	....	....	....	....	....	....	....	.92	....	....	....	....	....	....	....	.92	....
19-19.9	....	....	....	....	....	....	....	....	....	.94	....	....	....	....	....	....	$.94	.94	....
20-20.9	....	....	....	....	....	....	....	....	....	.96	$.95	....	$.96	....	$1.01	....	.96	.96	....
21-21.9	....	....	....	....	....	....	....	....	....	.98	.98	....	.98	....	1.03	....	.98	.98	....
22-22.9	....	....	....	....	....	....	....	.. .	....	1.01	1.01	....	1.00	....	1.05	....	1.01	1.01	....
23-23.9	....	....	....	....	....	....	....	....	....	1.04	1.04	....	1.02	....	1.07	....	1.04	1.04	....
24-24.9	....	....	....	....	....	....	....	....	....	1.07	1.07	....	1.04	....	1.09	....	1.07	1.07	....
Bel. 25	....	$.98	....	....	$.90	....	....	$.93	....	....	....	....	....	$.90	....	....	....	....	$.88
25-25.9	....	1.00	....	....	.92	....	....	.95	....	1.10	1.10	$.78	1.06	.92	1.11	....	1.10	1.10	.90
26-26.9	....	1.02	....	....	.94	....	....	.97	....	1.13	1.13	.80	1.08	.94	1.13	....	1.13	1.13	.92
27-27.9	....	1.04	....	....	.96	....	....	.99	....	1.15	1.15	.82	1.10	.96	1.15	....	1.15	1.15	.94
28-28.9	....	1.06	....	....	.98	....	....	1.01	....	1.17	1.17	.84	1.12	.98	1.17	....	1.17	1.17	.96
Bel. 29	$1.06	....	$.96	$1.03	....	....	....	....	$1.20	....	....	....	....	....	....	....	....	....	....
29-29.9	1.08	1.08	.98	1.05	1.00	....	....	1.03	1.22	1.19	1.19	.86	1.14	1.00	1.19	....	1.19	1.19	.98
30-30.9	1.10	1.10	1.00	1.07	1.02	....	....	1.05	1.24	1.21	1.21	.88	1.16	1.02	1.21	$1.16	1.21	1.21	1.00
31-31.9	1.12	1.12	1.02	1.09	1.04	....	....	1.07	1.26	1.23	1.23	.90	1.18	1.04	1.23	1.18	1.23	1.23	1.02
32-32.9	1.14	1.14	1.04	1.11	1.06	....	....	1.09	1.28	1.25	1.25	.92	1.20	1.06	1.25	1.20	1.25	1.25	1.04
33-33.9	1.16	1.16	1.06	1.13	1.08	....	....	1.11	1.30	1.27	1.27	.94	1.22	1.08	1.27	1.22	1.27	1.27	1.06
34-34.9	1.18	1.18	1.08	1.15	1.10	....	....	1.13	1.32	1.29	1.29	.96	1.24	1.10	1.29	1.24	1.29	1.29	1.08
Bel. 35	....	....	....	....	....	$.96	$.91	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34	....	1.31	.98	1.26	1.12	1.31	1.26	1.29	1.29	....
36-36.9	1.22	1.22	1.12	1.19	1.14	1.00	.95	1.17	1.36	....	1.33	1.00	1.28	1.14	1.33	1.28	1.29	1.29	....
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38	....	1.35	1.02	1.30	1.16	1.35	1.30	1.29	1.29	....
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40	....	1.37	1.04	1.32	1.18	1.37	1.32	1.29	1.29	....
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42	....	1.39	1.06	1.34	1.20	1.39	1.34	1.29	1.29	....
40,over	1.30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44	....	1.41	1.08	1.36	1.22	1.41	1.36	1.29	1.29	....

Column 1—Companies posting are Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Bay, Eason, El Dorado, Cities Service, Falcon, Globe, Gulf, Johnson, Kanotex, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun Vickers and Wilcox.
Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.
Column 3—All purchasers.
Column 4—Humble Oil & Refining Co. and Sinclair Oil Purchasing Co.
Columns 5, 6, 7 and 8—All purchasers.
Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tidewater Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)
Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)
Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co.
Column 12—All purchasers.
Column 13—All purchasers (effective July 6, 1937).
Column 14—Magnolia Petroleum Co.
Column 15—Humble Oil & Refining Co. (effective July 6, 1937).
Column 16—Humble Oil & Refining Co.
Columns 17 and 18—Shell Petroleum Corp.
Column 19—Tide Water Oil Co.

Rocky Mountain Runs

Production estimates for week ended April 2 follow:

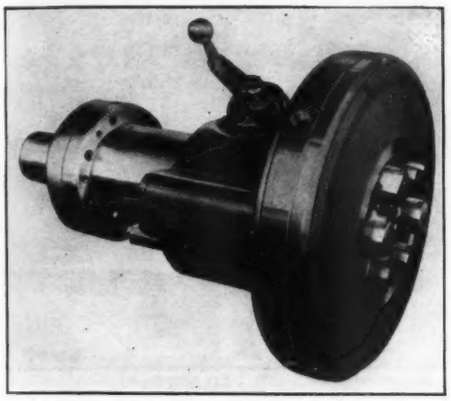
	Bbls.
WYOMING	
Salt Creek	16,320
Big Muddy	1,290
Badger Basin	190
Black Mountain	100
Byron	4,200
Dallas Derby	560
Dutton Creek	60
Elk Basin	10
Frannie	980
Garland	2,030
Grass Creek	10
Hidden dome	150
Hudson	290
LaBarge	970
Lance Creek	10,450
Lost Soldier	1,740
Medicine Bow	3,580
Midway	40
Oregon Basin	1,990
Osage	890
Pilot Butte	20
Quealy dome	820
Rex Lake	40
Rock River	2,140
South Casper	490
Poison Spider	280
Teapot	20
Warm Springs	80
Wertz	860
Total Wyoming	50,600
MONTANA	
Border	60
Cat Creek	600
Cut Bank	7,000
Dry Creek	1,230
Kevin-Sunburst	3,230
Pondera	1,010
Total Montana	13,130
COLORADO	
Florence	330
Fort Collins and Wellington	310
Iles dome	2,450
Moffat	390
Orchard	40
Rangely	80
Tow Creek	220
Price	510
Total Colorado	4,330
NEW MEXICO	
Cooper	5,010
Eaves	960
Eunice	26,270
Hardy	1,710
Hobbs	15,630
Jal	1,270
Langlie	3,330
Lynch	620
Lynn	820
Mattix	2,640
Monument	27,830
North Lynch	50
Penrose	5,060
Rhoades	90
Skelly	1,880
South Eunice	2,870
Vacuum	670
Artesia Maljamar	7,160
Getty	200
Hogback	200
Rattlesnake	750
Table Mesa	90
Total New Mexico	105,110
Total Rocky Mountain region	173,170

Elimination of the federal 1-cent per gallon emergency gasoline tax and removal of the state's 1-cent per gallon emergency gasoline tax next year, which together cost the motorists of West Virginia more than $3,000,000 annually, will be advocated at the annual convention of the West Virginia Petroleum Association to be held April 29 at the Daniel Boone Hotel, Charleston.

New or Improved Equipment

Collapsible Tap Announced by Landis Has Circular Chaser

The Landis Machine Co., Waynesboro, Pa., has developed a new receding chaser collapsible tap which employs a circular chaser. This tap, the



Landis style CBLM, was designed for production tapping of line pipe, casing, and drill pipe couplings in the tube mills. It was engineered for application to the types of tapping machines generally used for this class of work and to meet all requirements for producing a high-quality thread. It will produce threads well within all A.P.I. tolerance specifications. It can be used for tapping couplings made from seamless (grade C or D) or welded steel or wrought iron.

The head of the tap is a self-contained unit, which is detached from the body. This design permits using several sizes of heads on one body. The standard body will cut an actual thread length of 5⅝-inch as required for A.P.I. couplings, including grade D long casing couplings.

Construction of the tap is unusually simple, with no small and troublesome parts. It is easy to operate and maintain. The tap is expanded by a short movement of the crank handle, operating through a rack and pinion, to bring the tripping ring into contact with the face of the coupling, and thus bringing into operation the receding mechanism as the tap is fed into the coupling. The crank handle controls the manual movements of the housing and is fitted with a latch so that the housing and trip ring can be moved back and locked out of the way to provide access for replacing the chaser slides. Adjustment is provided for thread length so that the tap collapses automatically at any predetermined length. The tripping ring is of the reservoir type with provision for directing a flow of lubricant directly over each chaser.

Bulletins, Booklets and Other Literature for the Trade

How chrome-molybdenum bolts made good on a tough job is related in the newest number of the Moly Matrix, published by Climax Molybdenum Co., 500 Fifth Avenue, New York.

A sheet announcing "used equipment specials" accompanies the March issue of the Bridgeport Bulletin, published by Bridgeport Machine Co., Wichita, Kans.

"The Evolution of Furnaces" is the title of one of the spreads in the new 64-page catalog offered by the M. H. Dietrick Co., 140 South Dearborn Street, Chicago, dealing with design as applied to all types of furnaces. An interesting outline of the development of furnace construction over the past 25 years is given.

Use of alloy cast iron has provided strength and resistance to high pressures in a new slush-pump developed for oil wells, says the Nickel Cast Iron News, published by International Nickel Co., 67 Wall Street, New York.

How balanced operation reduces evaporation losses at an oil-storage bulk plant is told in an article in the March number of the Water Tower, published by Chicago Bridge & Iron Co., Old Colony Building, Chicago.

A broadside, significantly titled "New Wings," printed by SKF Industries, Inc., announces, with pictures, the addition of two new wings to the company's plant at Front Street and Erie Avenue, Philadelphia, Pa.

An FWD truck servicing an oil well in southern California is shown in the current issue of Truck News, published by the Four Wheel Drive Auto Co., Clintonville, Wis.

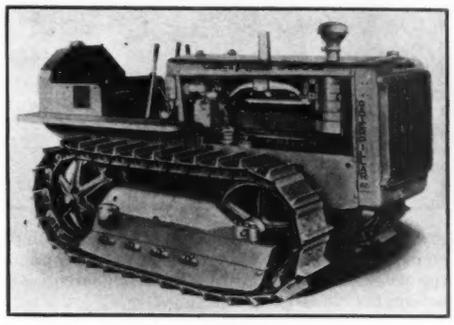
S. R. Dresser Manufacturing Co., Bradford, Pa., has released a 16-page booklet on the Dresser No-Thread fittings, style 65. These are self-contained pipe-joints, which connect pipe without threading.

IT JUST PEELS FOR ADJUSTMENT

The American Well & Prospecting Co., Corsicana, Tex., makes accurate adjustment between the halves of the eccentric straps which actuate the valve motion of a Gumbo Buster 12-by-12 twin-cylinder, roller-bearing, steam drilling engine by means of laminated shims, thus contributing to efficient engine operation. These solid shims, which simply peel for adjustment, are said to afford ease and accuracy in field service adjustment as well as in original assembly.

"Caterpillar" Diesel Has Wide Oil-Field and Refinery Use

Offering diesel power in a practical size to new thousands of tractor users, Caterpillar Tractor Co. has announced a new track-type tractor, the diesel



D2. Pulling lighter-blade graders, maintenance machines or rotary scrapers, the new tractor works on only 1¼ gallons of low-cost fuel per hour. As a consequence, fuel savings of 60 to 80 per cent may be expected. Reduced fire hazard through the use of diesel fuel makes these machines especially suitable for work around refineries and oil fields.

There are only three engine-operating adjustments—the water-pump, the fan-belt, and the valve-clearance. Both the fuel-injection pumps and valves are set at the factory and require no additional field adjustment.

A unique feature is the twin radiator, developed by "Caterpillar" engineers. One is for cooling the water and the other for cooling the lubricating oil, as oil at the proper temperature insures longer life for the engine-bearings.

A hot-water manifold on the front side of the fuel-filter housing keeps the diesel fuel oil at the proper temperature, regardless of weather conditions. Positive starting is provided by a 10-horsepower independent gasoline engine, which cranks the diesel through a pinion and clutch arrangement. This is similar to the starting method used on all models of "Caterpillar" diesel tractors.

New Hose Will Stand Abuse

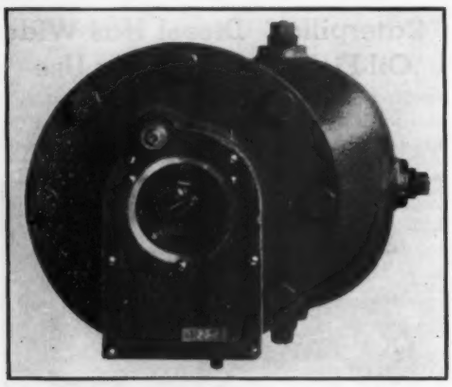
Peerless, an all-synthetic, moulded braided, fuel oil-distillate hose, especially adapted for use as reel hose in tank-wagon service, has been announced by United States Rubber Products, Inc. An outstanding advantage of this hose, it is claimed, is that it may be kinked or otherwise abused without inflicting permanent damage. The cover is said to withstand the contamination of oil and at the same time to have a highly satisfactory abrasive resistance. Thousands of feet of Peerless have been sold to the U. S. Navy for refueling service on airplane carriers.

New N.E.M.A. Standards Adopted

Standards for welding electrodes recently have been adopted by the Electric Welding Section of the National Electrical Manufacturers' Association and arrangements have been made to distribute them through member companies and from the association headquarters at 155 East Forty-fourth Street, New York. The principal functions of these standards are: (1) To define the various classes of metallic electrodes used in arc welding; (2) to standardize the packaging, diameters, and lengths of the various types of electrodes.

Alarm Signals if Liquid Rises or Falls Past Certain Point

"Refinery watchman" is the name Shand & Jurs Co., Berkeley, Calif., applies to the S&J level alarm. This device, of air-valve type, may be applied to any vessel to signal or indicate the rise or fall of a liquid beyond a predetermined high or



low point. The design of the alarm, with a single connection to the vessel, reduces to a minimum the possibility of false tripping or signaling as a result of surge or ebullition.

The Type V, shown in the illustration, is equipped with a pilot valve for air or gas operation. It can be used in connection with a whistle to attract attention when the high or low level has been reached, or with a diaphragm-operated valve for liquid flow control. The pilot valve is designed to operate on 15- to 20-pound air line pressure, and is reversible in operation by a simple change of the link connection to the float-shaft.

All S&J level alarms are made with seamless-steel trim. Bodies may be had in cast steel or iron for service up to 125 pounds, or in cast steel for 300-pound service.

Promotions and Appointments Made by Jones & Laughlin

Appointment of three assistant general managers of sales and opening of a new district office

R. T. Rowles *W. H. Wiewel* *H. J. Watt*

in Baltimore, Md., together with several promotions and new appointments in district sales offices, effective April 1, are announced by Lewis M. Parsons, vice president and general manager of sales of the Jones & Laughlin Steel Corp., Pittsburgh, Pa. The three assistant general managers of sales are R. T. Rowles, W. H. Wiewel, and H. J. Watt. Mr. Rowles and Mr. Wiewel have general supervision over products sales departments and Mr. Watt over eastern district sales offices.

Mr. Rowles will supervise general activities of the hot-rolled, cold-finished wire products and warehouse sales departments. Mr. Wiewel will supervise general activities of by-products and pig iron, sheets and strips, tinplate, and tubular products sales departments. Mr. Watt will have charge of New York City and the East, with general supervision over district sales offices in Boston, New York, Philadelphia, Atlanta and the new district sales office in Baltimore.

Arthur A. Wagner, assistant manager of hot-rolled sales, becomes manager of hot-rolled sales, succeeding Mr. Rowles. John O'H. Anderson, assistant district sales manager in New York, becomes manager of sales, tubular products, succeeding Mr. Wiewel. E. J. Dickson becomes assistant manager of sales, tubular products, in Pittsburgh.

The new district sales office in Baltimore will be in charge of V. A. Jevon, as district sales manager, and H. R. Dorney, as assistant district sales manager, the latter being promoted from the Philadelphia office. John B. DeWolf is appointed district sales manager in Philadelphia, succeeding Thomas C. Ham, who is transferred to Pittsburgh to supervise the corporation's industrial training plan. Herbert B. Spackman is made assistant district sales manager in Philadelphia. Edward H. Hughes is made district sales manager at St. Louis, succeeding J. B. Hungate, who resigned.

Two new assistant district sales managers have been appointed in New York, under Mr. Watt. They are William K. Breeze, transferred from the Cincinnati office, and Hughart R. Laughlin, at present in the New York office. F. B. Kittredge has been promoted from the Philadelphia office to assistant sales manages in Boston under Samuel A. Fuller. Charles M. Mason has been promoted from the Cleveland office to assistant district sales manager in Buffalo, under Charles F. Gold.

George Herold Joins Wheatley

George F. Herold, who recently joined the staff of Wheatley Bros. Pump and Valve Manufacturers, Tulsa, as sales engineer, has had wide experience in the pump, electrical, and engine business. After graduating from the University of Kansas with a degree in mechanical engineering he was sales engineer for the Wagner Electric Corp., St. Louis, Mo., from 1927 to 1930. He resigned to go with Mid-West States Utilities Co., and was with that organization in Texas at the time the East Texas field was being developed. In 1935 he took a position with the Fairbanks-Morse Co., as sales engineer in the Tulsa office. He held that post until he joined Wheatley.

Delco-Light Plants

Of interest to engineering contractors is a line of portable light and power plants especially designed by Delco-Light to eliminate the delay, extra costs, and inefficiency that penalize construction work when electricity is not available or the wrong type of current is found. Delco-Light plants, ranging in capacity from 150 to 6,000 watts and available in hand-operated batteryless, automatic or remote-control types, provide light as well as power for air-compressors, pumps, hand tools, drills, grinders, etc. Delco units are easily loaded on a truck and transported from one location to another.

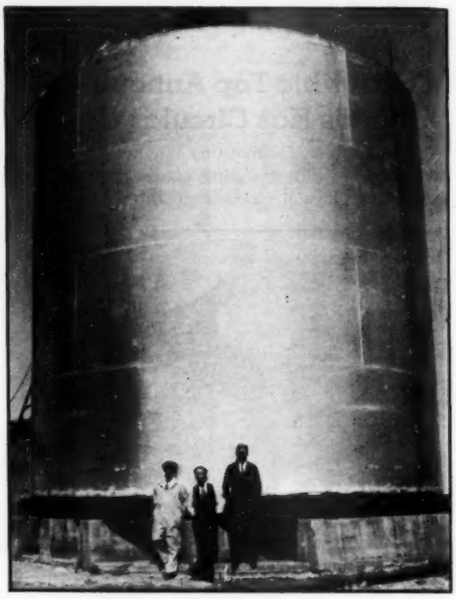
TANKTRUCK IS STREAMLINED

Many think of streamlining as the designer's way of giving modern cars a "racey" appearance. But it conserves power and saves fuel by reducing wind resistance. The modern streamliner illustrat-

ed here is a 1,000-gallon gasoline transport tanktruck built by the Columbian Steel Tank Co., of Kansas City, Mo., for the Continental Oil Co. According to the builders, arc welding made the design of this particular body possible. The welding was done with shielded-arc equipment supplied by the Lincoln Electric Co., Cleveland, Ohio.

Big Rubber-Lined Tank Is Made for Hydrochloric Acid Use

The 120,000-gallon rubber-lined tank shown in the illustration was installed recently by Consol-



idated Chemical Industries, Fort Worth, Tex., and is believed to be the largest ever constructed for hydrochloric acid service. It is 26 feet in diameter, 25 feet high and is used for the storage of hydrochloric acid, used extensively in the treatment of wells to increase their flow.

The tank, of welded steel plate construction, was lined with a $\frac{1}{8}$-inch thickness of Triflex rubber by the B. F. Goodrich Co., Akron, Ohio. This lining offers a 3-ply construction embodying the advantages of both hard and soft rubber. It is equipped with special built-in expansion joints to prevent cracking or buckling.

Owing to the size of the tank, it was necessary to install the lining in the field. The major problem was how to vulcanize the lining. This was accomplished by covering the tank with fabric to retard radiation, then filling it with water, brought to the boiling point by injecting live steam. Engineers figured the heat radiation loss on the basis of the normal atmospheric temperature for that time of year, which was around 60 degrees, and it was estimated that a single portable boiler could provide the steam required. But about the time vulcanizing got under way the temperature dropped to 20 degrees and the boiler could not provide sufficient steam to hold the water at the boiling-point. The problem was solved by fast thinking. A railroad locomotive was run up on the track adjoining, where it teamed up with the boiler to supply the necessary steam.

Advancements and Expansions Made by Chemical Process

Chemical Process Co. of Breckenridge, Tex., has announced promotions and additions to its service facilities. G. R. Whitney, formerly secretary and treasurer, has been made vice president, with headquarters in Breckenridge. A. J. Buchanan, of the Breckenridge office, has been promoted to secretary and treasurer. M. E. Chapman, Mid-Continent manager, with offices in Tulsa, has been made vice president.

New treating stations have been built in Hugoton, Kans., and Shreveport, La. C. J. Thompson, with offices in Amarillo, Tex., is in charge of the Hugoton station, and F. F. Carr, formerly at Odessa, Tex., has been promoted to district manager in Shreveport. Mr. Carr has been in the service of the Chemical Process Co. several years, since graduating from the Colorado School of Mines. With this expansion the company now has 14 offices and treating stations in the Southwest.

Protection Against Electrolysis Given by Wind-Electric Unit

For cathodic protection of pipe lines the Wincharger Corp. of Sioux City, Iowa, has perfected a standard production wind-electric generator which effectively and economically gives the required protection against pipe-line electrolysis, according to W. W. Watts, vice president of the company. Designed by Wincharger's wind-electric engineers in cooperation with pipe-line cathodic protection engineers, this unit consists of a specially designed generator 7½ inches in diameter, operated by direct drive from an 8-foot air-foil propeller. It starts putting electricity into the pipe line in a 4-mile windhour breeze and in a 20-mile wind reaches top output of 20 to 35 amperes, according to the varying ground resistances. At 20 miles per hour or 850 revolutions per minute of the propeller, the patented Albers centrifugal airbrake automatically checks the speed to maintain a constant charging rate regardless of increased wind velocities.

Electric current is collected from the generator by means of a double brush collector ring utilizing two carbon brushes. The unit turns with the wind on a ball-bearing turntable and is easily shut off by means of a positive-acting auto-type brake. The generator has grease-sealed ball bearings which require no oil during the life of the unit. The 5½-foot stub tower on which the unit is mounted fits a special sectional steel tower furnished by Wincharger for height of 25 to 105 feet.

Bovaird in K.M.A. Field

James P. Tune is manager of a new store opened April 1 by the Bovaird Supply Co., Tulsa, at Kadane Corner, in the K.M.A. field, North Texas. Mr. Tune formerly was field salesman for Bovaird, working out of the Oklahoma City store. Fletcher V. Strong, assistant manager at Kadane Corner, formerly worked out of Bovaird's store in Ada, Okla., as field salesman. Both men have a wide acquaintanceship among oil men of the Southwest.

Here and There With Men Who Manufacture Equipment

Mine Safety Appliances Co., Pittsburgh, Pa., has removed its Houston, Tex., office from 2018 Capital Avenue to 1718 Louisiana Street. George J. Gruber is district manager.

R. K. Mangan has been appointed vice president of the Buda Co., Harvey, Ill. He will be in charge of advertising and of domestic and export sales of diesel and gasoline engines to the automotive, general industrial, marine, stationary and oil-field trade. Mr. Mangan has been associated with the company 20 years.

Union Construction Co., 1725 West Anaheim Street, Long Beach, Calif., is successor to R&R Construction Co. as Pacific Coast distributor and erector of Lee C. Moore steel derricks. W. B. Rector is president of Union Construction Co., which does an oil-field contracting and rig-building business. E. M. Findlay is vice president and W. W. Hoagland secretary-treasurer.

Oil Center Tool Co., Houston, Tex., has closed its Corpus Christi, Tex., store, but its products are available at supply houses.

Rivets of Uniform Ductility Are Made by Champion Method

Use of cold-driven rivets in tank construction has certain advantages which commend it to the oil industry. This is particularly true in the case of the large oil-storage tank farm. The practice of cold-driving rivets has been in use for years, but developments in the rivets and riveting equipment have given it added interest. The Champion Rivet Co., Cleveland, Ohio, has perfected a double heat treatment which is said to produce rivets of uniform ductility, eliminating danger of failure. Concerning this method the company says:

"We have developed a method of heat treatment which is peculiar to ourselves and we have found that over a wide number of applications the rivets we anneal are absolutely uniform and will produce the desired results. Such rivets are dependable and are superior because of their accuracy, ease of handling and finish. They have been driven cold successfully in sizes up to and including 1-inch diameter with many of the pneumatic, hydraulic. and mechanical riveters available. Application of the rivets is speedy and safe. No heater or heating equipment is required.

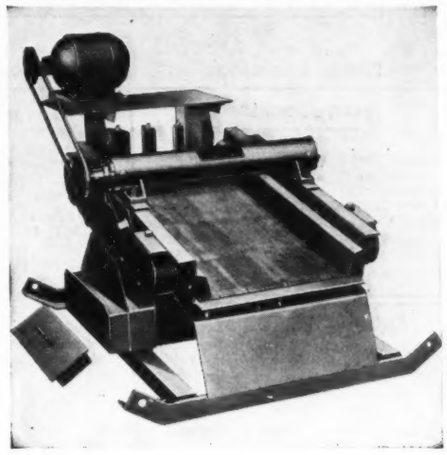
"By using rivets made cold in the solid die and omitting the usual allowance for expansion by heating, the rivet holes can be drilled with one-thirty-second inch clearance. This low clearance results in better fitted rivets and concentrically formed heads. The holes are filled solid with a metal-to-metal contact and the rivets do not become loose because of entrapped scale. Fitting the rivets into the holes for driving is done manually without the use of tongs.

"Cold-riveted construction is sturdy and dependable. The strength of each joint can be computed with mathematical nicety and it is a simple process to provide accurately for all stresses. Although quite rigid, a riveted tank is sufficiently flexible to adjust itself to inequalities of foundation, loading, vibration, shock, or the forces of the elements.

"Often it is necessary to dismantle tanks and move them to another location. This can be easily accomplished with the riveted type of tank."

Screen for Reconditioning Mud Has Features of Importance

Link-Belt Co., Philadelphia, Los Angeles and Houston, is offering a small-size improved vibrating screen, Type NRM-124, for reconditioning rotary mud. Among the features of this new screen, the manufacturer sets forth the following:



Clear unobstructed screening deck, 2 feet wide, 4 feet long.

Improved manner of securing stainless-steel screen-cloth assures uniform tension.

Tubular rubber cushioning of uniformly stretched screen-cloth assures dry rejects and maximum life of cloth.

Adjustable wing deflectors assure good distribution of mud over screening surface.

Unitized mud-tank skidded and complete with motor supports, making for ease in moving screening unit from one location to another.

Trough connection or outlet for screened mud is provided on either or both sides of screen-box.

Can Keeps Electrodes Fresh

The Harnischfeger Corp., of Milwaukee, Wis., now is putting the Smootharc welding electrodes in vacuum-packed cans to end the problem of how to keep welding electrodes fresh over an indefinite period of time. The electrodes are taken from the drying-ovens and immediately placed in the new container. Tops are hermetically sealed on. This allows the large consumer to buy electrodes in quantity and store them with safety.

Air view of Republic Steel Corp.'s new 98-inch continuous strip mill in Cleveland's Cuyahoga River Valley. Mill buildings cover 21 acres. The large building at the right is the hot mill; the two long buildings in the center, the annealing and pickling departments; and the two long buildings to the left, the cold mill. The office and welfare buildings at rear of 350,000-gallon water standpipe.

CLASSIFIED ADVERTISING

Patent Attorneys

JACK A. SCHLEY
PATENT LAWYER

Patents obtained — infringement practice in all Courts—oil field experience. 1807-11 Tower Petroleum Bldg., Dallas. 2014 Second Nat'l. Bank Bldg., Houston. 707 Insurance Building, San Antonio. 433 Munsey Building, Washington, D. C. Address any of these offices.

PATENTS — TRADE MARKS

All cases submitted given personal attention by members of the firm. *Form "Evidence of Conception" and instructions*
"How to Establish Your Rights"—Free

LANCASTER, ALLWINE & ROMMEL
Patent Law Offices
418 Bowen Bldg. Washington, D. C.

For Sale—Maps

WILDCAT MAP
OF
TEXAS
AND
Eastern NEW MEXICO
Up to Date Wildcat Data monthly
Single Issue $3.00
3 Months Special Offer $7.50
ZINGERY OIL MAP COMPANY
Fair Bldg. Ft. Worth, Tex.

Leases and Drilling Blocks

QUICK action wanted on McClosky well on seismograph structure in No. 1 location Illinois Basin for percentage of acreage. Address Box J-310, The Oil and Gas Journal, Tulsa, Oklahoma.

PARTY desires to sell stock and interest in oil producing acreage in San Juan Co., New Mexico. Address Box J-323, The Oil and Gas Journal, Tulsa, Oklahoma.

LEASES—ROYALTIES near Ordovician wildcat semi-proven offers reasonable chance play safe quick money. E. CROFT, PROCTOR, TEXAS.

SECURITY ABSTRACT COMPANY
El Dorado, Arkansas
Fee, Lease & Mineral Ownership on short notice. Ownership maps.

A "Complete" service on developments Texas Panhandle Field. Reasonable Monthly rates, one or all Counties. Dwight Well Log Service. Rule Bldg., Amarillo, Texas.

NEW MEXICO Oil Leases for sale, Wholesale. Inquiries invited. Write, Box 507, Las Vegas, New Mexico.

New Mexico OIL LEASES WHOLESALE 40 acres at a time.
Roy G. Barton, Clovis, New Mexico.

SELL or DRILLING deal wanted. 200 A. deeded, Osage Oil Field, Weston Co., Wyoming. Box 174, Stanton, Neb.

OIL PRODUCTION FOR SALE

Approximately 30 bbls. gross settled production, Bartlesville and Peru sands, Creek County, Oklahoma. 5 wells, 360 acres leases, several good undrilled locations. Good lease houses and equipment. Price $25,000.00. Address Box J-342, The Oil and Gas Journal, Tulsa, Oklahoma.

600 ACRES—BEECHER CITY, ILL. In Louden Block. Want action and bonus. J. L. Jennings, Beecher City, Illinois.

KANSAS Oil Leases Wholesale. 40 acre tracts. All active counties. MARGARET HAYNES, R. No. 3, N. Topeka, Kansas.

FOR
SOUTH GEORGIA
Oil Leases and Royalties
Write
C. W. DEMING, Registered Dealer
Hinson Building, Waycross, Georgia.

FOR SALE: Production, leases and drilling propositions in blocks of 200 to 400 acres, near producing oil wells. W. P. Harley, Bowling Green, Kentucky.

LEASES, Royalties and drilling blocks throughout present hot play southern Arkansas. El Dorado Oil Exchange, Garrett Hotel Building, El Dorado, Arkansas.

Ranches and Farm Lands

400,000 ACRES of ranch Land sold in Southwest Colorado the last three months, is evidence, the producing Stock business is coming back. Write for choice Stock ranches at $2.50 per acre. Land with Gold mines, milk and honey. Wm. M. Haver, 2832 East Elm St., Wichita, Kansas.

VICKSBURG-PORT GIBSON, MISS. DISTRICT. 587 acres fenced, running water, excellent cattle range, two houses, gravel road, GENUINE OIL PROSPECT, $6 acre.

900 acres close in Vicksburg, fenced, (400 woven wire) fine cattle, general purpose, GENUINE OIL PROSPECTS, $11 acre.

2200 acres near Port Gibson, well improved, IDEAL CATTLE — GENERAL FARMING, game plentiful, oil drilling within five miles, $20,000, terms.
BARBOUR REALTY, Vicksburg, Miss.

Survey Service

THE DOWSING METHOD for locating oil structures, faults, and treacherous areas, operates on the principal of vibratory response to emanations from petroliferous sub-strata. Our WATSON No. 2, pioneer well of the Wilmington, Calif., field was located by this method and all my personally owned production. 15 years experience. This physico method may solve all your structural difficulties. Geo. Miller, 1548 Post Ave., Torrance, Calif. Ph. 983.

Business Opportunities

WANTED reliable contractor to drill McClosky well in Illinois Basin on seismograph structure. One capable of taking substantial interest in well. Give best price and amount of interest you will carry. Address Box J-333, The Oil and Gas Journal, Tulsa, Oklahoma.

Mailing Lists

COVERING every branch of oil industry. Write your needs. Oil Industry Mailing List Co., 909 Tulsa Loan Bldg., Tulsa, Oklahoma.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press. 215 East Third St., Tulsa, Okla.

Real Estate

FOR RENT — Desirable offices and stores in new insulated office building, Mattoon, Illinois—gateway to Illinois oil fields. H. R. Checkley, Mattoon, Illinois.

Situations Wanted

CIVIL Engineer, desires responsible position with oil, or gas Co. Experienced in railway construction, pipe line and lease surveys, also plane table surveys for seismograph crews. Address Box J-291, The Oil and Gas Journal, Tulsa, Okla.

CERTIFIED PUBLIC ACCOUNTANT With over 15 years' experience in public accounting; having a comprehensive knowledge of accounting for the oil industry and qualified to perform the duties of treasurer, secretary, auditor, or chief accountant in a large or small organization, desires to change from present position. Unbroken record of employment. Reasonable compensation. Address Box J-300, The Oil and Gas Journal, Tulsa, Oklahoma.

A-1 Warehouseman and production clerk desires foreign job. Presently employed past 10 years with major oil company. White, 107 N. Moody St., Victoria, Texas.

MECHANICAL ENGINEER, 27, married, desires connection with drilling company. Thoroughly practical; successful roughneck. 18 months' experience on rotary rigs. Familiar with tools and supplies. Address Box J-331, The Oil and Gas Journal, Tulsa, Oklahoma.

Help Wanted

SALES ENGINEER — Experienced in selling sucker rods and pumping equipment. State qualifications fully. Address Box J-320, The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED—MUD ENGINEER with chemical knowledge of clays and sales ability to contact oil well drilling field. Write giving qualifications. 603 Law & Finance Building, Pittsburgh, Pa.

CHIEF INSPECTOR for Tube Mills, experienced with oil country goods, boiler tubes, standard pipe, etc. Give complete details, experience, salary required. Address Box J-334, The Oil and Gas Journal, Tulsa, Oklahoma.

PRODUCTION DEPARTMENT MANAGER
Wanted by progressive organization a man experienced in acquiring leases, producing leases and supervising their development and production. Knowledge of Texas and Louisiana fields particularly desirable. State experience in detail, age and salary in last position. All replies will be treated confidential. Address Box J-340, The Oil and Gas Journal, Tulsa, Okla.

WANTED foreman for plate shop. Must be able to do layout work and welding, also handle men. State age and qualifications. Address Box J-341, The Oil and Gas Journal, Tulsa, Oklahoma.

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	*1 time*	*$5.00*
1 Inch	*13 times*	*4.50 per inch*
1 Inch	*26 times*	*4.00 per inch*
1 Inch	*52 times*	*3.50 per inch*

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

CLASSIFIED

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*	*7 Lines*	*$2.45*	*$4.20*	*$5.95*	*$7.70*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*	*8 Lines*	*2.80*	*4.80*	*6.80*	*8.80*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*9 Lines*	*3.15*	*5.40*	*7.65*	*9.90*
6 Lines	*2.10*	*3.60*	*5.10*	*6.60*	*10 Lines*	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

For Sale—Equipment

USED EQUIPMENT

Offered subject to prior sale and to price change without notice.

SECTIONAL BAILER

Exceptionally good 7" x 60-ft. long, 3-section used Bailer. Price: $175 f.o.b. Hutchinson Store. Ph: 911 or LD-9053.

ROTARY CROWN BLOCK

Johnston Gumbo Buster, Model A. Russian Type Rotary Crown Block. Bearings and all parts in good condition. Same block as described and pictured in American Well & Prospecting Co. Bulletin No. 21. Price: $150 f.o.b. Kilgore Store. Phone 52 or LD-1.

IDEAL ROTARY TABLE

20"-24" Ideal Universal Roller Bearing Rotary Table with Master Bushings welded to main gear. Table has not been overhauled but is in fair condition. Price, "as is": $150 f.o.b Kermit Store. Ph: 106.

8½" USED CASING

4,500-ft., 8¼", 32-lb., 8-thd., 8¼" long collar, excellent quality used Lapweld Casing offered subject to prior sale Chase, Kansas. If interested telephone Wichita: 2-1431 or Chase: 124 at once as this quality pipe moves quickly.

POWER GENERATOR

5-KW LeRoi, Model WW-3, 110/120 Volt DC Electric Generator Unit powered with 4-cylinder, Type W.P. LeRoi Gasoline Motor. Practically the same as a new unit, having been used only a few hours. Price: $420.75 f.o.b. Wichita Falls Store. Ph: 2-2106 or LD-84.

POWER HOIST

Size SDR-85, rebuilt C.M.C. Power Driven Medium Duty, 15-h.p. Reversible Hoist. Designed to lift 1700-lbs. with single line at 175 ft. per min. Increased capacity with multiple sheave blocks. Replacement parts readily available. Suitable for lease or commercial duties. Price: $250 f.o.b. Wichita, Kans.

ROTARY TONGS

Set of B-J Wilson type, Regular, Rotary Tongs complete with 4½" OD and 6⅝" OD heads. Good as new. Price: $250 f.o.b. Corpus Christi Store. Ph: 574 or LD-31.

BUTLER AUTOMATIC TUBING SPIDER

4-inch, Butler Automatic Tubing Spider fully 80% as good as new. Price, complete with good slips: $150 f.o.b. Oklahoma City Store. Ph: 7-2725 or LD-785.

OIL AND GAS SEPARATOR

5'x16'x150-lb. W.P. National, Type B-1H, Style No. H-521 Oil and Gas Separator complete with valves and connections. Designed to handle 40 million cu. ft. of natural gas and 40 thousand barrels of crude oil in 24 hours. First class condition in every respect. Price $750 f.o.b. Pampa Store. Ph: 884.

BLOW-OUT PREVENTER

9⅝" OD x 3½" OD Drill Pipe Autolock Hinged and Latched Packing Assembly complete with 3½" Baash-Ross Blow-Out Preventer. Good serviceable condition. Price: $75 f.o.b. Oklahoma City Store. Ph: 7-2725 or LD-785.

ROTARY ELEVATOR

6⅝" OD Byron Jackson (Wilson type) Extra Heavy, Center Latch Rotary Elevator, bored out for external upset 6⅝" Drill Pipe. Good condition. Price $120 f.o.b. Oklahoma City Store. Ph: 7-2725 or LD-785.

SAND REEL

Marion No. 75 Chain Driven Sand Reel with Lever, etc. Will spool 8,750-ft. of ⅝" wire. Completely overhauled and guaranteed to be in A-1 condition. Price $750 f.o.b. Russell Store. Ph: 434.

THE BRIDGEPORT MACHINE COMPANY
Wichita, Kansas, and Branches.